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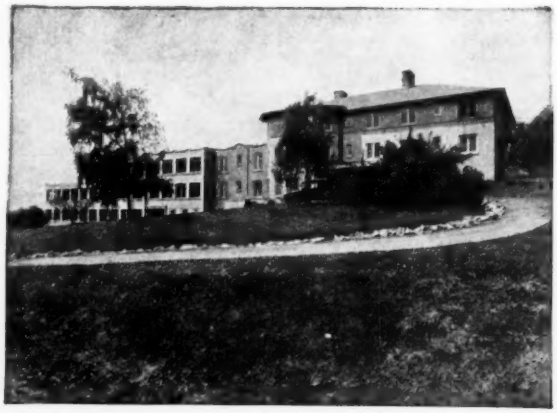

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CONTENTS—APRIL, 1927

Page

ORIGINAL ARTICLES—

Osteopathy and the Circulation..655
Practical Studies of the Nervous System ..660
Effects of Bony Lesions..662
Biochemical or Ultra-Lesion..666
Food Prescriptions ..668
Value of Calcium in the Diet..669
Functional Heart Disorders..672
Physiotherapy ..702

EDITORIALS—

Why Osteopathy? ..675
A Plea for More Specialization in Osteopathy ..676
X-ray Findings in the Digestive Tract ..678
Doctor and Patient..679

Page

Appeal for Records of Clinical Experience with Problem Children ..680
Something Worth Considering....680
A. O. A. and Denver Polyclinic Combined for P. G. Course..680

DEPARTMENT OF PROFESSIONAL AFFAIRS ..681

DEPARTMENT OF PUBLIC AFFAIRS ..681

CONVENTION NOTES ..688

O. W. N. A..694

AMERICAN COLLEGE OF OSTEOPATHIC SURGEONS..695

Page

EAR, NOSE, THROAT AND EYE ..696

BUSINESS EFFICIENCY ..697

COLLEGES ..699

BOOK NOTICES ..700

STATE AND DIVISIONAL NEWS ..703

STATE BOARDS ..707

MISCELLANEOUS—

Index to Advertisers..654
Buyers Guide ..710
Changes of Address..714
Professional Cards ..715
Applicants for Membership..717
Classified Advertisements ..719

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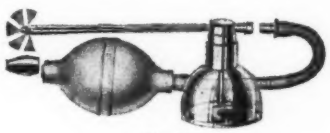

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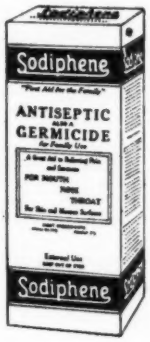

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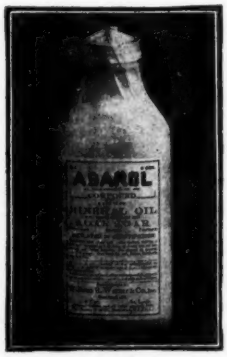

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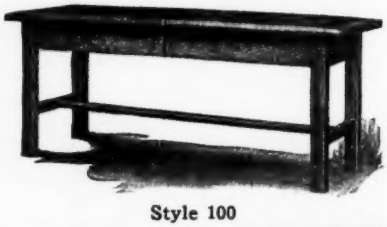

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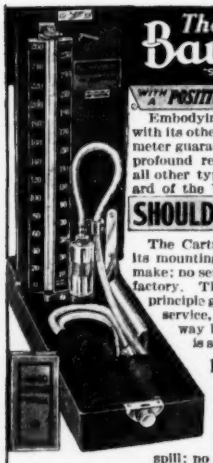

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INDEX TO ADVERTISERS

	Page
Alkalol Company, The	648
Allison Company, W. D.	648
Aloe Co., A. S.	652
A. O. A.	708
Anglo-American Pharmaceutical Corporation	642
Bovinine Company, The	713
Cairnes & Company	709
Cantilever Shoe	714
Clark's Round the World Tours	718
Classified Ads	719
College of Osteopathic Physicians and Surgeons, Los Angeles	650
Denver Polyclinic and Postgraduate Colleges	701
Deshell Laboratories	(Color Insert)
De Vilbiss Co., The	645
Dufur Osteopathic Hospital	644
Edwards, Dr. James D.	718
Finnerty, Dr. Francis A.	654
Fleischmann Company, The	643
Forman & Co., George M.	651
Harrower Laboratory, The	Inside Front Cover
Hayman, Dr. George T.	719
Horlick's Malted Milk Corp.	709
Huston Brothers Co.	647
Journal of Osteopathy	648
Kani, Dr. P. F.	712
Kirksville College of Osteopathy and Surgery	649
Laughlin Hospital & Training School for Nurses	712
Lavoris Chemical Co.	712
Mellin's Food Company	650
Non-Ptosis Service	717
Norwood Osteopathic Clinic	641
Oakland Chemical Company	707
Osteopathic Journal of Laboratory Diagnosis	650
Ottari	Inside Front Cover
Philo Burt Co.	647
Pneumo-Phthysine Chemical Co.	713
Pocock, Dr. Hubert	718
Professional Cards	715-717
Professional Insurance Corporation	641
Research Institute, A. T. Still	653
Rock Island Lines	651
Satis-Factory Co., The	713
Saunders Co., W. B.	Front Cover
Scholl Mfg. Co.	720
Sodiphene Company, The	645
Standard Oil Co., The	Outside Back Cover, Inside Back Cover
Still-Hildreth Osteopathic Sanatorium	719
Storm, Dr. Katherine L.	652
Taplin, Dr. George C.	652
Warner & Co., Inc., W. R.	646
Western Osteopath, The	718

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Osteopathy and the Circulation

CARTER H. DOWNING, D.O.
San Francisco

Among the greatest generalizations made by Dr. Still were his observations regarding the rule of the artery. Certainly the quality of dependence of any multicellular organism is expressed in the coordinate and interrelated nervous, circulatory, and hormonic influences, through which media of exchange the very essence of continued living is expressed. Naturally they are the key to biologic harmony, and one of the major biologic reasons for our osteopathic existences. As Pearl states, "the price paid for differentiation of special function is such that the parts of all higher forms of life are not endowed with the power of independent and indefinite living." Again, the maintenance of a delicate state of morphological and physiological balance in the multicellular organism must depend primarily upon such media as have the direct power of interrelating and coordinating the functional relationship between its vital constituents, none of which can exist alone. Consequently the biologic significance of the circulation is obvious.

It is sufficiently trite to state that good blood is dependent upon its own proper nutrition and dynamics for the maintenance of quality, quantity, motion and pressure as prerequisites of its normal function. Disturbance of cell nutrition is logically coextensive with pathology, for every pathological condition is fundamentally a nutritive one.

Obviously the nutrition, irritability and functional activities of all tissues depend upon a uniform flow of blood which is qualitatively proper to the needs of the tissue supplied. Logically, then, the rate of circulatory flow should receive the same therapeutic attention as is paid to the quality of the blood, particularly since the pathological physiology of the circulation is relatively as important in many so-called functional and organic derangements. A subactive circulatory state may precede many infections. Such circulatory depression as may follow chill predisposes unquestionably to the invasion of microorganisms. Vasomotor ataxia is a consistent and concomitant finding in the spinal lesion, not only of the segment involved, but also of the areas nervously supplied from that segment.

Such circulatory reactions as follow excessive fatigue, cold, excitement, indigestion, gravitation, traumatism, shock (physical or mental) and the spinal lesion are only partially appreciated as contributory causal factors, and given little or no specific therapeutic attention, although it is obvious that ultimate results must be in part dependent upon a return of normal circulatory equilibrium and flow. Even where quality is involved, we might assert that just in proportion as the quality of the blood is impaired, the rapidity of the flow becomes increasingly important, especially in those tissues where the blood is manufactured or to the organs which alter its quality. In fact, the most scientific treatment may be quite inadequate and unsatisfactory if there is such disturbance in the normal rate of flow as to interfere with the proper conveyance of nutritive materials to the affected tissues.

Recourse to any particular vaccine or serum is based on a consideration only of the quality of the blood and the character of the invading organism. The microorganism may divert the attention from the study of the pathologic physiology of the circulation if the investigator is satisfied that he has discovered the fundamental cause when he discovers bacteria which have begun to multiply in tissue with lowered resistance. Certain infections due to the more virulent organisms necessarily demand specific consideration. We cannot minimize their importance although they may be vastly less in proportion to the number of infections in which the microorganism is not the fundamental cause. However, serums or vaccines alone can never reestablish a disturbance of circulation which may precede and follow indefinitely both the inoculation and the infection.

It is apparent that such treatment as affects the circulation favorably is indicated whether or not the condition is curable. Certainly such manipulative and physical means as aid in the reestablishment of the normal circulatory flow are scientifically consistent whether induced generally, locally or segmentally through the intervention of the vasomotors. Such is theoretically consistent regardless of such clinical verifications as are noted in the immediate improvement in many conditions which are commonly associated with the so-called metabolic disorders, as well as in many febrile states resulting from specific infections.

HYPEREMIA

The circulation is modified by three main factors: The activity of the heart, changes in the cali-

bre of the blood vessels, and the amount and viscosity of blood. Other physical factors can be included, although extrinsic to the circulatory mechanism.

The calibre of capillaries and venules may, under a diversity of conditions, dilate or contract individually and independently of vasomotor control. The maintenance of this tonus is dependent upon the supply of blood received. When the vessel gets little blood, its tonus diminishes and dilatation follows. Thus it will readily be seen that it must, perforce, become relaxed and admit more blood in order that it may regain its normal tone.

It is evident that fundamental laws of hydrostatics and hydrodynamics are made use of in numerous cases. Pascal's law of fluid pressure is at the basis of blood distribution and blood flow — capillary attraction, osmosis, filtration and diffusion. The laws of air pressure, namely, the respiratory pneumatics, are utilized in both the processes of circulation and respiration, irrespective of nervous vasomotion.

Changes in the calibre of the blood vessels are, however, largely controlled by the vasomotor nerves so that the amount of blood which passes through any given tissue depends largely upon the activities of these nerves. Since the vasomotors control the distribution of blood it is evident that the vasomotor nerves are indirectly trophic and secretory in the same sense. Remarkable changes may occur in the amount of blood passing through the tissues and this is usually coexistent with an increase of the functions of that particular tissue. An increase in the amount of blood to any part is known as hyperemia, and such hyperemia is active provided there is an actual increase in the amount of flow of arterial blood, and passive when through obstruction the venous is retarded.

Active hyperemia is usually the result of vasomotor effects upon the blood vessels and is essentially a physiological process, being concerned largely with the supply of increased nutritive fluid to tissues which are assuming for the time a heightened activity. Hyperemia is the most widespread of nature's healing processes and is a striking and coexistent feature in all inflammatory reactions. Active hyperemia cannot fail to aid and legitimately increase all the activities of the tissues supplied. Any decrease in normal blood or lymph supply to the cord or drainage from the cord diminishes the efficiency of the cells in that structure. The presence of oxygen is necessary for normal nerve conductivity, which is decreased in the presence of carbon dioxide.[1] Increased arterial supply and venous drainage increases the activity of the segment affected.[2]

Passive hyperemia is an abnormal process. It may be general as in cardial diseases, or local as in the immobilized joint. It is more often the result of aberrent vascular reactions of vasomotor origin. Edema, or oozing of the fluid into the tissue spaces, is characteristic of cell instances of marked passive hyperemia, and in extreme cases, with great disturbance of the nutrition of tissues, hemorrhage may also occur. It is questionable whether we can safely designate as "organic or functional" the necessary nutritional difference which must exist between normal nerve cells and those suffering from an appreciable degree of malnutrition; for although hyperemia of a tissue may be primarily a purely functional vasomotor disturbance, this hyperemia may persist until all kinds of pathologic changes have developed with or without the aid of invading microorganisms. The point of demarcation is not necessarily apparent.

In chronic passive congestion of the lung, malnutrition of the alveolar epithelium may be followed by connective tissue changes in the alveolar walls, increase in the bulk of the smooth muscle, hemorrhagic infarctions, increased density of the organ and decreased elasticity. In the liver, passive congestion may result in considerable destruction of the liver cells, others may show fatty degeneration, necrosis and hemorrhage may follow and interstitial infiltration takes its place. In the spleen, passive congestion usually produces a cyanotic induration in which the organ becomes extremely hard and there is considerable interstitial infiltration. In the kidneys a characteristic rubbery hardness is found, tubular epithelium shows granular degeneration, and interstitial infiltration follows, coincidentally associated with excretion of considerable albumen, casts of various sorts, and distant functional disturbances. In the stomach and intestines passive congestion results in various degrees of digestive disturbances, desquamation of epithelial cells, and excessive secretion of mucus. In the limbs we find varicose veins with such malnutrition of the tissues that when secondary ulcerations appear they yield stubbornly to any therapeutic treatment.

In immobilized joints the passive hyperemia is essentially the effect of forced inactivity and lack of proper intrinsic dynamics of the tissue, together with added physical factors of gravity leading to a state of hypostasis. Such physical restraint of the patient may lead to general hypostasis and in the lungs, for example, may so lower the nutrition and power of resistance of the tissues as to induce a condition of hypostatic pneumonia.

It is evident that even if the quality of the blood is normal, retardation of the circulation will allow of such disturbance of chemical relations and nutritional welfare as to produce definite pathology. Our therapeutic consideration of the rapidity of the flow of the blood in pathological conditions must conform with the known significance of such interference. Moreover, since passive hyperemia presents itself as a physical condition of the circulation it would appear that it would, under ordinary circumstances, be particularly amenable to physical measures.

ARTIFICIALLY PRODUCED PASSIVE HYPEREMIA

Pare and Bier were the first to employ artificial passive hyperemia therapeutically. Bier was led to the employment of hyperemic treatment of tubercular joints by the observation that in congestion of the lungs, due to insufficiency of the mitral valve, there was relative immunity to tuberculosis, while in pulmonary stenosis, where there is marked anemia of the pulmonary circulation, tuberculosis was frequently noted. Artificial passive hyperemia has been used and advocated quite extensively by various individuals in all forms of acute and chronic

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joint affections and in ununited fracture to promote callous formation.

I believe that the therapeutic value of artificial passive hyperemia has been vastly overrated. In mitral stenosis it must not be lost sight of that the pulmonary congestion is aerated blood having all the characteristics of arterial blood, which is a a markedly different condition of affairs than the blood condition provoked by passive hyperemia of the joint. Bier's assumption is obviously an incorrect one, if applied to the joints with expectant results similar to that seen in the pulmonary congestion. It is hardly logical in line with observations of circulatory effects of passive congestion. It would rather appear that such a state of circulatory stasis would impair the tissue nutritionally and lend to the furtherance of pathognomonic reflex activities through the development of irritative chemical imbalance and disturbed intrinsic pressure in the joint and associated structures.

EDEMA

Normally, terminal distribution of blood fluids into the tissues, together with return drainage of these tissues, is carried on in such manner that, regardless of the rapidity of circulatory flow, there is at no time an excessive quantity of fluid among the cells. Conditions may arise, however, in which disproportionate rate of inflow and outflow occurs, in which case abnormal accumulation in the tissue spaces follows. This condition of the lymphatic circulation is known as edema, and the tissues so affected are swollen, ooze fluid on incision, and are inelastic on account of the spreading apart of the cells so that they retain the impress of one's fingers on pressure. Any organ may become so, but the most striking examples are seen on the body cavities and the subcutaneous or areolar tissues, or where the tissues are particularly elastic.

Many theories have been proposed to explain this phenomena. Changes in infiltration and osmotic pressures, toxicity of the endothelial cells which increase their permeability, disturbances of trophic, vasomotor, and motor nerves, alterations in nutrition and metabolism of the tissues themselves which may change their power of actively attracting and retaining water within themselves, all deserve consideration. Naturally the obstruction to the outflow of fluids involves both the lymphatic and venous drainage, which are partially compensatory to each other. Venous or lymphatic stagnation is felt by all the tissues, not only through the obstruction to the escape of fluids, but through the subsequent obstruction to the entrance of new nutritive arterial blood.

JOINT INERTIA AND ITS RELATION TO THE CIRCULATION

The immobilized joint presents a more or less complete inertia, particularly involving all the intimate structures directly attendant to the two bones comprising that joint and to a lesser extent those tissues only partially immediate to the joint. The relative amount of circulatory stagnation as manifested by passive hyperemia, edema and tissue acidosis is almost in direct ratio to the amount of concomitant inertia of that particular tissue. Not only is passive congestion a consistent pathologic finding in the spinal joint lesion, but furthermore, it serves as a fair index to the amount and extent of associated low-grade tissue inflammation. Where the hypostasis is most marked the degree of associated pathologic tissue changes is apt to be most pronounced.

The forced inactivity and lack of proper intrinsic dynamics of the joint and contiguous and interrelated tissues, together with the added physical factor of gravity, lead to a state of circulatory stagnation or hypostasis. Interference with various hydrodynamic and hydrostatic laws which ordinarily promote circulatory activities through normal expression of tissue mobilities occurs. Intrinsic disturbance through lack of proper dynamic pressure variations within the tissue follows. The kneading action of the muscle, the intra-articular pressure variations, the continuous pressure modification of overchanging structural relations—all are necessary to the proper propulsion of fluids. Inertia breeds diminution in all these dynamic pressures, variations and resultant disturbances arise in filtration, diffusion, and osmotic pressures, all favoring the development of partial circulatory stasis.

Physical activity is essential to normal circulation in structures whose function is vitally motion. Naturally it less immediately applies to passive organs whose circulatory activities are essentially dependent upon general circulatory and vasomotor tonus.

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The Circulatory Factor in Intervertebral Tissue Pathology is not such that its presence can be supported by any evidence of direct circulatory embarrassment as might cursorily suggest itself in view of the intervertebral foramina. Hence, any claim of either direct arterial or venous impingement is questionable. The low grade tissue pathology is such that certain of the tissues, particularly the connectives, show hypertrophic, hyperplastic, or occasionally atrophic changes. Vascular, nervous, and articular structures show varying degrees of

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pathological and degenerative changes such as would be expected in view of the existing circulatory involvement. Naturally, it is an unsettled question as to how much of this low grade inflammation of intervertebral tissues is directly referable to abnormal vasomotor and trophic reflex activities, initiated viscerally or in the spinal structures themselves, since the circulatory conditions physically brought about by the relatively inert joint, as well as the primary perturbed vasomotor and trophic influences, enter into the pathologic entity. The lesion cannot maintain itself independently of its original source unless confirmed by secondary influences within itself. Its external causes and reflexive sources may be transient, and if no longer operative, its confirmation must be interpreted basically in terms of inertia. This biostatic quality is synonymous with the pathologic perpetuation of the lesion; and, fundamentally, the correction of the lesion is the accomplishment of correct dynamics of the part.

SEGMENTAL VASOMOTION

The segmental construction of the vertebrate body is evidenced both in the nervous and vascular systems. This is particularly noticeable of the vascular apparatus in the intercostal and lumbar areas, though less noticeable in the vessels of the head and of the pelvis. Since every tissue in the body is centrally controlled, the circulatory welfare of the brain and spinal cord is our first consideration, for it follows that because of close nervous and circulatory relationship certain attendant changes in the blood supply of the controlling spinal segment occur with every pathological condition. These far-reaching variations and effects are necessary, inevitable and coincident. Since segmental vascular equilibrium is sensitive even in health and extremely unstable locally or generally in all pathological states, it is establishing an unnecessary therapeutic limitation to ignore its segmental physiology.

Hence, physiology and pathology, and therefore therapeutics, must be regarded primarily from the fundamental viewpoint of the relationship of the individual cell to its blood supply—especially the nerve cells of the spinal cord and brain, since they are control centers.

BEHAVIOR OF THE CIRCULATION IN INFECTION

Systemic toxicity tends to reflexly irritate the entire neuromuscular mechanism of the spine. The release of such spinal tissue tension by manipulative procedure is followed by very definite systemic reactions—probably due to the fact that augmentation of such nerve impulses occurs as allows of greater and more specific action upon the autoprotective mechanism with increase in antibody and antitoxin formation. Naturally, the syndrome of toxemia is partially nervous and partially circulatory. The entire nervous system is rendered unstable as the nerve cells in general suffer from the toxic effect. Moreover, a sympathetic syndrome is evidenced by lack of appetite, coated tongue, hypochlorhydria, constipation, increase in pulse rate, etc. The rise in temperature is evidently of sympathetic origin and due to the irritative effects upon sympathetic nerves, including the sympathetico-trophic glands. Vasoconstriction of the blood vessels of the skin is due to the increased output in adrenalin and naturally interferes with heat elimination so that the increase in oxidative activity in the body produces temperature, as no outlet is offered. In contradiction, physiologic hyperemia, such as follows physical exercise, is associated with dilatation of the superficial blood vessels, sweating, and rapid elimination of superfluous heat. The startling drop in temperature often associated with manipulative treatment of the spine together with the marked improvement of the patient in general would indicate (1) that a general counterstimulation of the sympathetic nervous system proper and the sympathetico-trophic glands occurs; moreover, that this stimulation awakens greater autoprotective reactions against the infection; (2) that a general equalization of the circulation occurs, thereby lowering the temperature and further tending to restore circulatory balance to all the various organs.

Miller, Millard and others have stressed the value of therapeutic use of this pneumatic control in various conditions. Such augmentation of the circulatory flow in various infectious diseases should promote greater autoprotective reactions upon the part of the organism, provided such procedure throws in the system more toxins than ordinarily received, particularly since the amount of reaction of the organism necessarily is dependent upon the amount of toxin to be acted upon.

Aspiration of inert fluids may be demonstrated in certain edematous states such as anasarca, acites, etc. The exercise of such specialized technic as is used for this purpose will immediately reduce the edematous condition, showing that the venous and lymphatic systems have been aspirated and more fluid has been taken into the general arterial circulation.

This particular form of technical procedure should have a wide range of general therapeutic application.

Dr. Still virtually brought all disease under one principle, referable to the same basic law, the state of the blood. "The body contains within itself all the chemicals and the medicines necessary for the cure of disease."

VASOMOTOR INSTABILITY

The vasomotor mechanism is normally in sensitive equilibrium immediately responsive to the most delicate as well as the most pronounced stimuli. It is easily disturbed by variations in both nervous and physical states. Counterbalancing effects may characterize these vasomotor responses with or without changes in the mean arterial blood pressure, depending in part upon the scope of the vasomotor reaction and in part the degree of compensatory balance. These conditions may be due to a general hypotonia of the sympathetic with a resultant derangement of the normal circulation throughout, or may be segmental from such locally acting causes as the spinal lesion. When general, this sympathetic insufficiency may be an hereditary weakness of the sympathetics or part of a generalized acquired atonia or vagotonia, probably due in part to a chronic malnutrition of the central nervous system. Trophic disturbance which may follow such perversions of the atonomic system may lead to a change in the blood picture, occasionally a high leukocyte count and slight eosinophilia.

There are a number of compensatory balances in the circulation of the body, e. g., when the blood

vessels of the skin dilate the kidneys are less active, less blood passes through them; when the abdominal vessels dilate sufficiently, circulation is slower through the brain; when the spinal muscles dilate or contract there are compensatory changes in some other area which is usually the spinal cord.

"The spinal pack produces strong fluxion of the spinal vessels, later hyperemia of the skin, whereby the spinal cord is drained."[3]

It is probable that thermal stimulation arouses either reflex vasoconstrictor or vasodilatator activities, depending upon the character of the stimulus. Arnold states "repeated brief pressure along the spinal column arouses the reflex constrictor nerves and brings about a certain amount of contraction in the blood vessels of the skin and muscles in the region of the back treated. On the other hand, continuous pressure along the spine arouses the reflex dilators and brings about a certain amount of dilatation of the blood vessels in the skin and muscles of the back." It would appear that thermal and mechanical stimuli have analogous influence and that furthermore, compensatory relation exists between the blood vessels of the cord and adjacent spinal structures.

The vasodilator and viscero-accelerating nerve centers respond less quickly and are more readily exhausted than vasoconstrictor, and viscero-inhibitor centers, but when excited overcome at least temporarily the latter.

Vasoconstrictors respond first to stimulation, but if stimulation is maintained, dilators overcome the action of the constrictors. The constrictors respond best to rapidly repeated brief stimulation—the dilators to prolonged stimulation.

Impulses originated in cutaneous muscular and articular structures are transmitted to spinal vasomotor centers, thereby influencing the distribution of the blood generally and locally in response to the vasomotor reactions elicited. The character of this response depends upon the nature of the sensory stimuli aroused. Manipulative measures whether of motion or of pressure tend to produce such corrective influences as promote and stabilize normal circulatory equilibrium—usually through the medium of the active hyperemia induced—if we consider reduction of congestion or increase of circulatory activity as such.

It is highly probable that circulation in the anterior body tube (anterior to vertebral column) is in a measure compensatory to circulation in visceral structures of the part in a manner similar to that found between spinal structures and spinal cord.

It is to be expected that since the abdominal is the largest vascular area, fluctuation here affects the blood supply to practically every other part of the body, including the spinal cord and the brain.

Normally, circulatory balance between the brain and splanchnic areas is maintained through vasomotor control. Cerebral anemia, resulting from dilation of the abdominal vessels, irritates vasomotor centers which cause the abdominal vessels to contract and, conversely, cerebral hyperemia from contraction of the abdominal vessels irritates vasomotor centers, causing the abdominal vessels to dilate. A continuously acting perversion of this mechanism may produce various types of irritable mental states from insomnia to various psychoses. A chronic condition of cerebral anemia and abdominal hypotension is the usual end result. Syncope is an acute manifestation of this condition.

Vasoconstrictor and vasodilator nerve cells arise from the second dorsal segment to the coccygeal nerve center inclusive—which although subordinate to the chief nerve centers in the medulla control segmentally the blood supply in every part of the body—in a large measure independently of the chief centers. Grossly there are three general vascular divisions of the spinal cord and consequently of the corresponding parts of the body. The upper six dorsal segments form one division which together with the cranial sympathetics control the blood supply of the head, the thorax and the arms. The six lower dorsal with the lumbar form the second division and control the abdominal circulation, while a third division consisting of the sacral and coccygeal segments controls the blood supply to the lowest part of the abdomen, the pelvic region, the hips and the legs. Vascular disturbance may involve only a segment. It may be more widespread and involve one or more regional divisions, or it might involve the entire vascular apparatus.

In the main, circulatory balance exists between the brain and abdomen, spinal tissues and spinal cord, and the thoracic abdominal, and pelvic vascular apparatus with the spinal cord areas applying.

Circulatory activities are in a great measure influenced by the physical activities of the skeletal body. Motion is essential to those tissues whose activity is vitally motion. Incidentally, decrease or increase of circulatory activities of the skeletal body as a whole must in turn reciprocally affect visceral circulation in a corresponding manner. It is easy to visualize the deep circulatory flux both visceral and skeletal which must follow general mobilization of the skeletal body.

Beneficial results follow massaging of muscle masses. Passive movement, Swedish movements, etc., will accelerate the lymphatic circulation and relieve infiltration of the tissues. Exercise serves as a general means of producing greater circulatory activity as well as increasing oxygen intake. However, deep manipulative treatment and adjustment of the spinal structures is infinitely more profound and enduring than superficial massage or passive movement in its circulatory effects.

Physical and vasomotor control of circulation is intrinsically a part of osteopathic procedure whether it be the physical result of general skeletal mobilization or careful manipulation of an organ or tissue on the one hand, or the nervous result of general, regional or segmental spinal therapy.

If there is any lesson which we need to learn more than another, it is that we live in a world of cause and effect; that from a standpoint of health at any rate, there is no such thing as vicarious atonement; that disease comes as a result of a violation of the laws of our beings, and that disease can only be prevented by a thorough understanding of the causes of disease and an intelligent avoidance of those things which produce it.—C. A. W.

[3]Kellogg: Hydrotherapy.

Practical Studies of the Nervous Systems

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III

The Spinal Nervous System in Relation to Therapeutics (Historical)

Fundamental principles are eternal and appear out of the darkness of the past as beacon lights guiding the progress of civilization.

Franklin flew his kite and discovered the eternal principle which made it possible for Edison and Marconi to create the electrical age.

It was a long journey of oppression from the cry of the first woman suffragist demanding a vote and voice in a Colonial Assembly in 1648 to the modern woman of today. But this cry echoed from century to century until it won recognition because the principle was eternally right.

The present therapeutic revolution, led by the osteopathic profession, is the consequence of certain physiological principles which appeared to keen medical observers long before Dr. Still discovered the human spine and announced the birth of a new science.

It is interesting to note how obstinately the orthodox medical profession refused to recognize these great osteopathic physiological principles reported by their own investigators. But a great leader always appears to interpret and establish eternal principles. Again, a simple philosopher of a lowly place was called to lead.

Some of the fundamental principles of osteopathy were brought to light in 1834 in a book published by Griffin Brothers of Edinburgh and London.[1] They discovered that there existed some important relationship between the spinal and sympathetic nervous systems and therapeutics. The following quotations, taken from their book, might very well be quotations from Dr. Still's early works: "We should like to learn why pressure on a particular vertebra increases, or excites, the disease about which we are consulted; why it at one time excites headache, or cough, or sickness of the stomach . . . why in some instances any of these complaints may be called up at will by touching a corresponding point of the spinal chain . . . why that point should always be sore to the touch in such attacks."[2]

They found that a great number of disorders originated in spinal irritations. They claimed that acute inflammations were not evidenced in spinal irritations, but that "fevers, headaches, sickness of the stomach and other disorders showed symptoms of spinal tenderness." The following statements are taken from a table in this book showing a careful analysis of 148 cases of various diseases, grouped according to the region where spinal tenderness was produced: "Twenty-eight cases of cervical tenderness gave prominent symptoms of headache, nausea, faceache, fits of insensibility, and affections of the upper extremities. Forty-six cases of cervical and dorsal tenderness showed prominent symptoms of pain of stomach and sides, pyrosis, palpitation, oppression, in addition to above symptoms. Twenty-three cases of dorsal tenderness gave symptoms of pain in stomach, cough, oppression, syncope, hiccoughs, eructations. Fifteen cases of lower dorsal and lumbar tenderness showed symptoms of pain in abdomen, loins, hips, lower extremities, dysuria, ischuria, in addition to some of the dorsal symptoms above."

So the labor pains of the birth of osteopathic principles began nearly one hundred years ago.

In 1834, P. H. Ling noted that in heart affections, tenderness was elicited by pressure over the "fourth or fifth dorsal nerves on the left side."[3]

Marshall Hall published a work in 1841 establishing the fact of a spinal reflex—thus making possible an answer to several of the questions asked by the Griffin brothers.[4]

As far as I can discover in medical literature the first attempt to divide the surface of the body into certain definite areas, in which were associated pains from certain organs, was made by Dana in 1887.[5] Head, in 1893, gave a more accurate demonstration of cutaneous areas and points of pain related to the viscera and corresponding spinal segments.[6]

An early physician of Sweden, Henrik Kellgren, clinically established the fact that "friction over the tender spinal areas would lessen the irritative conditions of the various internal organs affected." He further observed that the inflammatory conditions of various internal organs are "usually accompanied by tenderness of the spinal nerves, especially marked over the site of the communicating cords to the sympathetic ganglia."[7]

While these medical investigators were demonstrating the fact that an actively diseased organ could produce a tender reflex station, a country physician, far removed from the advantages and association of these scientists, discovered that the cause of many diseases and sensitive areas was a lesion of the spine itself and that the correction of that lesion resulted in a cure. Thus the eternal principles of osteopathy were proclaimed by a simple prophet over fifty years ago.

Osteopathy was of necessity proclaimed as an independent therapy to struggle in opposition to the established medical therapy, in order that its fundamental principles might endure, and any move to compromise the true osteopathic concept with medical bigotry is traitorous.

DEVELOPMENT OF THE SPINAL NERVE

It is profitable to consider the development and general scheme of a typical spinal nerve, such as a thoracic.

McMurrich[8] demonstrates a fundamental difference in the development of the two spinal roots. "The anterior root is formed by axis—cylinders which arise from neuroblasts situated within the substance of the spinal cord, while the dorsal root arises from cells of the neurol crest, their axis-cylinders growing into the substance of the cord

while their dendrites become prolonged peripherally to form the sensory fibers of the nerve." The posterior and anterior roots growing outwardly soon come together, their fibers mingling in the formation of the true spinal nerve. This mixed nerve emerges from the cord through the intervertebral foramina, and immediately divides into two trunks—the posterior and anterior branches. The posterior nerve is distributed to the dorsal musculature and integument. The anterior branch continues its outward growth and again divides, one division passing into the tissues of the body wall, while the other enters the splanchnic mesoderm and forms a ramus communicans to the sympathetic system. Thus we have demonstrated the early intercommunication of the cerebrospinal and the sympathetic nervous systems, through the anterior root connection with the splanchnics and the posterior with the spinal ganglia.

While the human embryo develops as a segmental organism, as far as nervous, muscular and skeletal structures are concerned, in these studies we wish to emphasize the close coordination of the great nerve pathways.

The nerves of the cerebrospinal system reach practically every part of the body. The long nerve filaments act as wires over which pass the impulses unifying the various structures of the body with the various functions of the organism. "Their afferent fibers carry to the central nervous system the sensory impulses produced by external or internal stimuli. The efferent fibers carry outgoing impulses to the organs of response."[9]

SPINAL CORD

The spinal cord is that part of the central nervous system which lies within the upper two-thirds of the vertebral canal, extending from the upper border of the atlas to the upper border of the second lumbar vertebra. This column of nerve substance is composed of white and gray matter. The white matter constitutes the chief portion situated externally and is composed of ascending, descending and mixed nerve tracts. The gray is the interior matter surrounding the central canal. The cord exhibits two enlargements, the upper, or cervical, corresponds to the origin of the brachial plexus, and the lower, or lumbar, which provides for the origin of the nerves supplying the legs and pelvic girdle.

The function of the spinal cord is that of conduction, through the tracts of the white matter, and that of reflex action of the gray matter by the conversion of afferent into efferent impulses.

The conduction tracts of the cord consist of three main groups. First, the association tract, which connects the different segments of the cord, and thus brings about coordination of the various impulses entering or leaving the cord. Second, the efferent projection fibers which connect the different parts of the brain with the cord. After decussation the fibers terminate in the gray substance of the opposite side and the impulses are relayed to reach the muscles over fibers which leave the cord in the anterior roots. The pyramidal tract, the main motor pathway, is of this group. Third, the afferent projection system of fibers which primarily enter the cord by the posterior spinal nerve root. The majority of the posterior root fibers extend upward in the ascending tracts of the dorsal funiculus. The different fibers undergo synapse with association fibers in the gray substance of the cord and then function as secondary afferent neurons conducting impulses either to the motor neurons within the cord, or to higher centers in the brain. Fibers of the secondary afferent neurons concerned with sensory impulses cross to the opposite side of the spinal cord and extend upward to the brain in the ventral and dorsal spinothalmic tracts of the spinal lemniscus.[10]

"On reaching the medulla all impulses producing sensations of pain, heat, cold, and touch (including one dimensional localization) have crossed the cord. They continue without interruption through the brain stem in the tractus spinothalamicus lateralis to terminate in the nuclei of the thalamus. In their course they are joined by impulses from the cranial nerves, which have also crossed to the side of the brain stem opposite to that from which they have entered. Impulses which give rise to the recognition of posture, passive movement, and two-dimensional localization reach the medulla on the side from which they have originated. They have been conducted along fibers of primary afferent neurons which terminate in the nucleus gracilis and cuneate nucleus, from which arise the secondary afferent neurons which carry them to the thalamus. These fibers cross the medulla immediately and take up a position in the medial lemniscus close to those which are conducting impulses for the sensations of pain, temperature, and touch."[11]

The impulses from the various reflexes in man reach the cerebral cortex through the afferent system, and through the "correlation of these olfactory, auditory, visceral, tactile, thermal, and painful impulses pouring in upon it, there is built up within the cortex a representation of the outer world and its constantly changing conditions. The responses appropriate to meet the entire situation in which the individual finds himself from moment to moment are initiated, in large part at least, in the cerebral cortex and are executed through the motor mechanism. In these responses the great motor path is the dominant factor, although other parts of the mechanism are secondarily called into action, especially the proprioceptive reflex arcs, including the coordinating and tonic mechanism of the cerebellum.[12]

The brain and spinal cord contain untold numbers of central or association neurons over which the incoming impulses find their way into the proper outgoing paths. Physiologists[13] claim that it is chiefly the impulses aroused by external stimuli that rise above the subconscious level and result in clear-cut sensations. The organism is thus enabled to respond appropriately to the demands of a constantly changing environment through the correlated reactions called forth by such external stimuli. Meeting these complex situations requires the nicest correlation of sensory impulses received from various courses, and "it is in connection with these higher correlations and adjustments that consciousness appears."[9] Therefore, "the whole function of the nervous system is comprehended in the statement that it unifies the individual in his reply to his environment."[14]

SPINAL THERAPEUTICS

Therapeutics is based upon a rational diagnosis. No diagnosis is complete without a thorough examination of the spine.

In a discussion before the American Medical Association, in 1907, Dr. W. B. Snow of New York City, declared that "no physical examination will in the future be considered complete either of nervous diseases or in any pathological condition without a proper scientific examination of the spine." Dr. M. E. Clark tersely expressed the osteopathic concept as long ago as 1906. "I believe that every disease is characterized by external changes or signs. And I further believe that every chronic visceral disorder is manifest by changes in the spinal column that can be, by the practiced eye and touch, readily interpreted. In short, there are various signs along the spinal column that point out the weakened or diseased parts of the body."[15]

Dr. Louisa Burns states that "the existence of osteopathic or superficial centers depends upon the fact that all structures innervated from any segment of the spinal cord are affected by all sensory impulses reaching that segment."[14] In this connection the examination of the reflexes constitutes a most important factor in diagnosis of diseases of the cerebrospinal nervous system, through the signals of the reflex arc.

Since the spine is the backbone of osteopathy, lesions affecting the integrity of the spinal nervous system should receive the first consideration of the osteopathic physician. Structural changes here may be the exciting causes of interference with normal circulation, innervation, nutrition and elimination.

As osteopathic physicians, we are concerned with many causative factors which may disturb the function of the spinal cord and nerves. Well, to mention all such causes would mean a complete review of osteopathic literature. But some of the important factors are:

(a) Condition of the spinal column. A rigidity or general relaxation, atrophy or contraction of the musculature, lessened mobility, are all indicative of a disturbance of function of the spinal cord.

(b) If the intervertebral discs, which assist in the protection of the cord and in maintaining normal posture, are impaired through malnutrition, lesions, contractures, or occupational posture, the spinal cord is more easily disturbed, as in concussion.

(c) Tissue starvation through a toxic blood supply, which may occur as a result of any toxic material in the blood.

(d) Abuse of organic function, especially of the gastro-intestinal and genital tracts, will disturb the function of the cord through impairment of its blood supply.

(e) Vertebral and rib lesions are responsible for most functional disturbances of the spinal cord. Here are twenty causes self-evident to every osteopathic physician.

(f) The spinal function depends very largely upon the amount and condition of blood circulating through it. A disturbed blood supply is a predisposing cause and its correction is responsible for the many good results gained by our treatment of nervous disorders.

In this connection we should make a thorough study of the motor and trophic effects of spinal cord diseases. Also of the effect of osteopathic lesions upon the function of a nerve in reference to the term "nerve irritation" so often used in our literature. Very important findings have been made by physiologists recently concerning the conduction of a nerve impulse,[16] especially by Hill[17] and Toshiro.[18]

The osteopathic physician should stand preëminent in the treatment of mental and nervous diseases, since osteopathic lesions are the great causative factors in these disorders. Our success depends upon a correct diagnosis, which cannot be made without a comprehensive knowledge of the spinal nerves, reflex arcs and structures involved.

Since the medical profession has persistently refused to accept the osteopathic principles, as reported by their own observers and our Dr. Still in the interest of suffering humanity, a greater responsibility is imposed upon us to apply these principles in the diagnosis and correction of abnormal factors (lesions) in structure which result in suffering and disease.

The following chapters should be read in connection with this study:

The Spinal Centers. Burns, Louisa, "Basic Principles."
The Great Afferent System, The Great Efferent System. Ranson, "Anatomy of the Nervous System."
Reflex Arcs, Diagrams of Nerve Pathways. "Halliburton's Physiology," pp. 711, 723, 724.
Reflex Centers. "Starling's Physiology." (New Edition).
Effects of Bony Lesions. Burns, Louisa, Jour. Am. Osteo. Assn., Dec., Jan., Feb., Mar., April, 1926-1927.

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[4]Hall, Marshall: Diseases and Derangements of the Nervous System.
[5]Dana, C. L.: Clinical Study of Neuralgias. New York Med. Jour., July 30, 1887.
[6]Head-Brain (Journal) London, 1893, XVI, No. 1.
[7]Cyriax, E. F.: The Elements of Killgren's Manual Treatments.
[8]McMurrich: The Development of the Human Body.
[9]Ranson: Anatomy of the Nervous System.
[10]Halliburton: Handbook of Physiology.
[11]Macleod: Physiology and Biochemistry, pp. 871, 872.
[12]Ranson: p. 317.
[13]Starling: Physiology (late edition.)
[14]Burns: Basic Principles.
[15]Clark: Applied Anatomy, p. 334.
[16]Macleod: Physiology and Biochemistry, p. 837, The Conduction of the Nervous Impulse.
[17]Hill, A. V.: Heat Production of Nerve. Jour. Pharmacol. and Exper. Therap.
[18]Tashiro, L.: Tohoku Jour. Exper. Med., June, September, 1926. (English)
[19]Deason: Physiology, General and Osteopathic.
[20]Sherrington: Integrative Action of the Nervous System.
[21]Macleod: Physiology, Evolution of the Nervous System.
[22]Gray: Cunningham Piersol Anatomies, Spinal Cord and Spinal Nerves.
[23]Burns: Physiology of Consciousness, Development of Cortical Co-ordinations.

In December, 1844, Dr. Horace Wells, a dentist of Hartford, Conn., underwent in his own person the operation of tooth-extraction while rendered insensible by nitrous oxide. On September 30, 1846, Dr. W. T. G. Morton, a dentist of Boston, employed the vapor of ether to procure general anesthesia in a case of tooth-extraction, and thereafter used it with complete success, which achievement marked a new era in surgery.

As a distinct vocation dentistry is first alluded to by Herodotus (500 B. C.). There are evidences that at an earlier date the Egyptians and Hindus attempted to replace lost teeth by attaching wood or ivory substitutes to adjacent sound teeth by means of wires or threads.

Galen (A. D. 131) taught that the teeth were true bones existing before birth, and to him is credited the belief that the upper canine teeth receive branches from the nerve which supplies the eye, and hence should be called "eye-teeth."

Effects of Bony Lesions

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PART V

LUMBAR LESIONS AND THEIR EFFECTS

The effects of lumbar lesions are, in many ways, more serious and more far-reaching than are the effects of other lesions. There is wider relationship of the various tissues concerned in the case of organs innervated from the lumbar cord, and hence reflex effects of disease of any given sensory area are more profound and at the same time more widely distributed than is the case with other spinal areas. The fact that certain of the reproductive tissues are innervated from the lumbar spinal cord adds to the complexity of these relations, and permits the effects of lumbar lesions to be carried over into the progeny of the lesioned individual.

The pathology of the lumbar lesion is the same as the pathology of other lesions of vertebrae, and the manner in which the effects of the lesion are produced is the same here as in other spinal areas. The lesion, however produced, is associated with congestion and edema of the articular and neighboring tissues. This edema extends into the body cavity and affects the spinal nerves and the neighboring sympathetic ganglia. Direct mechanical pressure of the edematous tissues, the increased amount of carbon dioxide, the increased amount of oxygen and the accumulation of improperly oxidized katabolites in the tissue juices, together with the subnormal alkalinity of edematous fluids, all diminish the efficiency of the affected nerve trunks and sympathetic ganglia as transmitting tissues. Here, as in other spinal areas, the very large nerve fibers with their heavy medullary sheaths suffer less from the edema and other factors associated with the congestion and edema. (The sectional area of a nerve fiber equals the sectional area of its medullary sheath.) The very small nerve fibers intended for distribution to the pelvic tissues and to the small deep spinal muscles have thinner medullary sheaths and are more seriously affected by the edema. The white rami communicantes which are present in the third, fourth and sometimes the fifth lumbar nerves and the axons of the sympathetic ganglion nerve cells, have either extremely thin medullary sheaths or none at all, and hence are most seriously affected by lesion pathology.

The structural relations of these nerve centers help to explain the effects of the lesion of any lumbar nerve and these may be reviewed very briefly.

The spinal cord below the second lumbar segment shows certain peculiarities, the result in part of the processes of cephalization and in part of adaption to the requirements of those organs not subject to the process of cephalization to any great extent.

The progressive decrease of the lower spinal segments, the tendency of the controlling centers to become superseded by the increasing efficiency of the cephalad nerve centers, the constant crowding of the visceral centers by the development of the leg-muscle centers, and the simultaneous rearrangement of the connections within the spinal gray matter, all add to the lumbo-sacral cord something of the complexity of relationship found in the medullary centers.

In these segments of the cord the gray matter is arranged in the form of a very short, broad H. The anterior horns contain several cell groups arranged in columns. The mesial cell group includes at least two columns. The axons of these cells innervate the trunk muscles. The lateral cell group of the anterior horn is divided into several columns. The axons of these cells innervate the muscles of the lower limbs. The lateral horn is not recognizable in the second, third and fourth lumbar segments, and the visceromotor functions seem to be performed by the cells lying in the lateral portion of the broad H. The fifth lumbar segment shows some lateral horn structure, and the sacral segments display the lateral horn cells distinctly as the origin of the nervous erigens.

The posterior horns of the lumbosacral segments contain a number of small cells, such as are found in the posterior horns throughout the spinal cord. The dorsal nucleus (Clarke's column) is absent.

The axons of the cells of the mesial group columns of the anterior horn innervate the following muscles. Multifidus spinae, interspinales, psoas major and minor, gemelli, glutei, obturators, pyriformis, and the lower parts of the abdominal muscles.

The axons of the cells of the anterolateral columns supply the muscles of the thigh, leg, foot and toes.

The location of the cells which supply several pelvic muscles is not exactly known. These muscles seem in part to be homologous with somatic muscles and in part with muscles of visceral function. The phylogeny of these muscles needs considerable study. The muscles supplied from the lumbo-sacral segments in this manner are the cremasters, sphincters ani, levator ani, coccygeus, compressor urethrae, ischiocavernosus, bulbocavernosus, transverus perinei, sphincters vesicae, and the sphincter vaginae.

The centers controlling the striated muscles of the pelvis and the thigh, leg, foot and toes, receive impulses from the following sources:

Descending impulses from the precentral convolution of the cerebral cortex affect the activities of all the muscles named, but chiefly those of the lower limbs.

Descending impulses from the cerebellum, vestibular nuclei, olive, quadrigeminates, medullary centers and the centers of the reticular formation maintain the normal tone of all the muscles innervated from these segments and coordinate their action in such a way as to secure equilibrium and to

provide for the delicacy of certain movements, notably those employed in walking, running and many others. Descending impulses from the red nucleus and associated centers bring these muscles under the control of the emotional states. This reaction is especially important in connection with fright, sexual excitement and under many other conditions.

Descending impulses from the medullary visceral centers coordinate the activities of the lumbosacral centers with the activities of other nerve centers. Defecation, urination and other visceral functions are thus coordinated.

Ascending and descending impulses from the lumbar and sacral centers concerned in the coordination of certain complex acts affect the centers governing the muscles named.

Somatic sensory impulses from the skin, muscles, joint surfaces and other sensory areas innervated from the same segments of the cord are concerned in the maintenance of the tone of striated and non-striated muscles, and in part in the control of the visceromotor centers located in the lumbar spinal cord.

Sensory impulses from joint surfaces and neighboring tissues affected by vertebral lesions affect these centers and thus cause abnormal contractions, spasms or atony of the sphincters and the muscles innervated from the mesial cell groups.

Visceral sensory impulses from diseased pelvic viscera may cause abnormal contractions of the lumbar muscles by way of these reflex arcs, and these reflex contractions may affect the position of the innominates and the lumbar vertebrae to some extent, usually by causing a long lumbar or dorsolumbar curve with the innominate following the sacrum. Such reflexes, however, do not cause lesions of the same type as those produced primarily by some force applied directly to the vertebrae or the spinal ligaments. The local edema, rigor and hemorrhages do not occur under these circumstances, at least in experimental animals.

The following accounts have been reported in several bulletins of the Research Institute and in "Basic Principles," and in "Nerve Centers."

In animals lesions of the first and second lumbar vertebrae produced lessened peristalsis in both large and small intestines. There was noted also dilatation of the blood vessels in the intestines, kidneys, bladder, ovaries, testes and the pregnant uterus. Gas accumulated in the intestines. Contractors were initiated in the pregnant uterus near term. In several cases of animals brought to be killed on account of abnormal labor the production of a lesion in the anesthetized animal stopped the contractions of the uterus.

Lesions of third, fourth and fifth lumbar produced dilatation of the blood vessels of the colon, bladder, and all reproductive organs. This reaction is lost on the section of the spinal cord at the level of the second lumbar spine. There was lessened peristalsis, more noticeable in the colon. Gas accumulated in the intestines. There was often reversed peristalsis in the colon.

The anospinal center is concerned in the control of all the structures involved in defecation. It lies in the lumbar enlargement but its exact location is not known. Both stimulatory impulses to the muscular fibers of the lower bowel and inhibitory impulses to the anal sphincters are sent from this center, mostly by way of the descending tracts of association and the third and fourth sacral nerves, or through the white rami of the first lumbar segments, the sympathetic ganglia and the inferior mesenteric and hypogastric plexuses. Impulses are sent upward from this center to thoracic centers for the stimulation of the abdominal and thoracic muscles.

The anospinal center is controlled by impulses from the following sources:

Sensory impulses are received from the region of the rectal and anal tissues, by means of which the normal impulses of defecation are aroused. Sensory impulses are received also from neighboring tissues, by means of which defecation movements may be inhibited, or at times initiated in the absence of the normal stimulation. This relation is evident under abnormal conditions, as in vaginal abnormalities, hemorrhoids, and other irritations of the region. Sensory impulses, mostly inhibitory in effect, may reach the center from the somatic structures. This relation is seen in the effects of lesions of the perianal tissues, and especially in the effects of malpositions of the lumbar vertebrae and the innominates.

Descending impulses from the cerebral cortex seem to act in a rather complex manner. First, the descending volitional impulses cause excessive contraction of the external muscles, including the glutei. Sensory impulses from these muscles assist in the inhibition of the anospinal center. The pressure exerted upon the mucous membrane by the descending column of feces on account of volitional contractions of the skeletal muscles probably lessens the sensory impulses reaching the center.

Descending impulses from the cortical centers stimulate the anospinal center indirectly. This relation is used in the attempt to establish the "habit" control by directing the patient to go to stool at certain times of the day, and to attempt to perform the act of defecation by using the abdominal muscles as in the normal act. This brings about stimulation of the nerve cells which control the skeleton muscles. Since the relationship between these cells and those concerned in the autonomic centers is very intimate, stimulation of the defecation center is secured. This attempt to secure normal defecation is logical only when efficient causes of the abnormal function have been or are being removed. Bony lesions must be corrected. As in the case of descending inhibitory impulses, we must recognize the possibility of a direct stimulation of the cells of the anospinal center from the cerebrum, though this must not be held as demonstrated, and now appears extremely unlikely.

Descending impulses from the cerebellum, quadrigeminates, olive, and the medullary and pontine centers are concerned in the maintenance of the normal tone of the muscles concerned in the defecation. These impulses are not necessary, since the act may occur in a normal manner, unconsciously, in men and animals in whom the cord has been severed or destroyed.

Descending impulses from the red nucleus and other basal ganglia may cause defecation to be affected by emotional states. Thus defecation may

be either inhibited or be performed involuntarily under emotional stress.

Association between the defecation, micturition, erection and parturition centers is very intimate. The defecation may be initiated involuntarily or may be inhibited by the different states of these other centers.

THE VESICOSPINAL CENTER

Micturition is accomplished in much the same manner as defecation, and the vesicospinal center is influenced by nerve impulses from the same sources.

Lack of control of the vesical sphincter in children, and sometimes in adults, may be associated with lesions of lumbar vertebrae, sacrum, or innominates. Certain peripheral irritations, as from worms, adherent prepuce or hooded clitoris, may affect the vesicospinal center.

The genitospinal center has been demonstrated for male animals and for men, but no homologous center has been demonstrated in the female. Impulses from this center act as inhibitors of other lumbar centers and of many medullary centers. Efferent impulses pass to the erection center and to the various centers for the skeletal muscles concerned in coition. The activities of the genitospinal center are influenced by impulses from the following sources:

Descending impulses from the red nucleus and neighboring basal ganglia are concerned in emotional states and may be either stimulatory or inhibitory. The ill effects of the reading of erotic literature by young people may be traced to the impulses aroused in the emotional centers by such reading. Descending impulses from the cerebrum probably act indirectly through volitional impulses upon other structures and through the influence of the descending volitional impulses upon the basal ganglia.

Sensory impulses from the genital tract, and to a certain extent from neighboring tissues also affect this center. Impulses from the articular and neighboring tissues affected by a bony lesion may cause various disturbances of the genitospinal center. These may, when due to the lesion alone, be relieved in a spectacular manner on correction of the lesion.

The erection center lies in the lower part of the lumbar cord. It is a vasomotor center and is in very close association with the genitospinal center. Its efferent impulses pass downward for the most part to the origin of the nervi erigentes. This center is influenced with and by the genitospinal center, but seems to be somewhat more easily affected by sensory impulses. In certain cases of malpositions of lumbar vertebrae, sacrum, coccyx and innominates the activity of the erection center becomes abnormal. Whether the bony lesion is ever the only cause of these disturbances is not certainly known, but the correction of the lesions, together with the correction of whatever may be found wrong from the hygienic standpoint, is sometimes followed by very speedy and apparently permanent relief in cases not associated with local structural causes of the disturbances or with diseases of the spinal cord.

The parturition center lies in the upper part of the lumbar cord. It is concerned more with the regulation of labor than with its initiation.

The parturition center acts by sending impulses to the uterine muscle, to the dilator center for the cervix uteri, to the centers for the abdominal muscles, and to other centers in the lumbar cord. It is not known whether impulses affecting the action of the respiratory center are from the parturition center or from other sources affecting the respiratory centers.

The parturition center may be affected by impulses from the following sources:

Sensory impulses from the uterine and neighboring tissues may decrease the uterine contractions, but usually increase them.

Descending impulses from the red nucleus and related ganglia may initiate, postpone, or hasten labor. This is evident in the premature births associated with battles, disasters, and other causes of emotional storms. It seems probable that labor may be postponed by excessive disgust or fear, and that certain emotional states may be responsible for other variations from the normal progress of parturition.

Probably no direct volitional impulses affect the center, but volitional impulses may affect the abdominal muscles and the emotional centers, and thus may indirectly affect the progress of labor.

Somatic sensory impulses may influence this center. It seems more probable that slight malpositions of structural tissues affect circulatory, nutritional and developmental conditions more seriously than labor itself. This does not apply to the gross bony malpositions which mechanically affect the birth canal. There is some evidence in favor of the view that the quality of the blood flowing through the center may affect its activity.

The lumbar cord contains vasomotor centers for the uterus, the urinary bladder and the prostate. These centers seem to be affected abnormally by somatic sensory impulses from the structures innervated from the same spinal segments. Congestion of these organs is always found when malpositions of the lumbar vertebrae, innominates or sacrum are present. Experimental stimulation of the somatic tissues innervated from the same segment of the cord affects the circulation of these organs.

The nervus erigens passes directly to the hypogastric plexus. It terminates by entering into the formation of the pericellular baskets of the small ganglia of this plexus. The gray fibers from these small ganglia pass to the blood vessels, chiefly of the external genitals. The visceral efferent impulses of the sacral centers pass chiefly by way of these paths.

THE CERVICODILATOR CENTER

The circular fibers of the os uteri are inhibited by impulses from this center. The center seems to be affected chiefly from the parturition center in the lumbar cord. Experimental and clinical evidence indicates that the activity of this center may be affected by sensory impulses from the somatic structures innervated from the same segments. Persistent atony of the cervicodilator fibers is usually present in female animals with mid-lumbar or lower lumbar lesions. The cervix shows especially marked congestion when the lesion affects the third or fourth lumbar vertebrae.

In this connection it may be noted that these lesions are almost invariably associated with habit-

ual abortion in female animals. Clinic records indicate that a similar relationship exists in the human.

The place of the internal secretions of the ovary and the testes in the development of the secondary sex characteristics of adolescents has long been recognized. The fact that such internal secretions may be adversely affected by circulatory and nervous disturbances is now only being definitely granted, even among osteopathic practitioners.

Lumbar lesions do modify the circulation through these tissues, and lower thoracic lesions also affect the circulation and the innervation of these important glands. If the adolescent is to develop into normal adult life there must be no lesions affecting the circulation through ovary or testis, and the normal internal secretions of these glands must find their way, by way of good blood flowing freely under normal pressure, to all tissues of the body.

The sensory impulses from the pelvic tissues are extremely important factors in cerebral development. Normal activity of the cerebral centers depends upon the reception of sensory nerve impulses from all somatic areas related with the brain. If the pelvic tissues suffer from congestion, edema, disturbed innervation or other conditions associated with abnormal chemical states of the tissue juices, then the sensory nerves from these tissues become abnormal. Exaggerated sensations from the pelvic tissues exert an evil effect upon the behavior and upon the cerebral development of an adolescent so affected. Diminished sensations lead to other types of malfunction and these may be even more serious in their ultimate effects than the condition of exaggerated sensory impulses. The reflex effects of either condition are sufficiently evil. The entire future life of an adolescent may be affected by a timely correction of lumbar lesions which initiate sensory disturbances of the pelvic tissues, or which cause congestion, edema and disturbed functions of ovary, testis or other pelvic or lower abdominal organs.

SUNNY SLOPE LABORATORY OF THE A. T. STILL RESEARCH INSTITUTE

The Biochemical or Ultra-Lesion *

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In a recent issue of the Osteopathic Magazine a general physician writing on general subjects stated "the osteopathic specialist does not study the human body from a general viewpoint."

That may have been true a few decades ago. If it was or is ever true, it is in the rare instances where the physician merely "gets by." A specialist is such because of his special knowledge of a given part or parts as correlated to all other parts and their functions, and in proportion as the therapist, special or general, coordinates the biochemical performances of all cells, tissues and organs, is he a real physician.

Why is it not practical for the osteopathic physician and specialist to adjust the body parts and functions on a basis of biochemistry while considering the mechanics of movements, the circulation of the body fluids and the impulses over the nerve paths? Does the knowledge of the body functions necessarily differ whether the diagnosis is made by an osteopath or other school physician? Is not the food and other environment the same? Is there any difference in the respiration, digestion, elimination or other evidence of metabolism regardless of the school of therapy interested? If biochemistry is of practical value in the diagnosis and treatment of disease it is surely of essential interest, and possesses an unusual value, to the therapist whose concept of the etiology of disease is primarily one of undue tension, pressure and poison—the osteopathic physician.

Whatever may be the motives prompting a man to assume the role of a physician, be they mercenary or altruistic, he proffers his services in behalf of the individual struggling for physical existence. If the physician's service is to be the best that present day progress can offer it is not sufficient to be contented with a superficial knowledge of anatomy, physiology and allied subjects. It is necessary that he evidence a practical working knowledge of what the units of the body are and how the body as a whole exists and performs. In this way only may he employ, to the advantage of normal functioning, those factors essential to cell life.

Man breathes, digests, assimilates, grows, eliminates and moves, as his chief expressions of function. The factors which determine these functions determine all other major and minor functions.

It may be commendable to know that the body is foolproof and that if one should supply oxygen to breathe, carbon, oxygen, hydrogen, nitrogen, phosphorus, sulphur, etc., in the form of food substances, and an ample amount of sunshine and exercise, and conclude that the respiration would be 18 to 22, the heart beat 70 to 80, the temperature 98.6, and the urine and feces in keeping with the normals as recorded by some author on physiological chemistry. While this invulnerable (?) position makes it very simple to conduct a practice of general medicine on the basis of "no history required"; "eat anything you wish"; "this general treatment will do the rest"; "ninety-five per cent of *my* patients get well on this regime and the other five per cent require but little more," this "haven of rest" or shotgun attitude is the stumbling block of many physicians and is the obstacle that blocks the progress of osteopathy.

It isn't necessary that you determine exactly that which enters the body must come out in exact quantities; that "there is no creation or destruction of matter in the body." These things have been proven for you, but it is for you to know what should enter the body of a given patient and that

*This is the first of a series of articles on biochemistry in the concept of osteopathy.

it does come out and that you prove it by established methods.

The body *is* a machine. But it is more than an aggregation of mechanical parts working together under the laws of mechanics. That may be true of the arm, leg or spine when put through their respective movements, but it is not true of the changes in the muscle cells which move them. The heart is a pump until the chemistry of the foods or their end-products go wrong, then it is a cell-mass evidencing a cell pathology that might have been a physiology had the biochemistry been "adjusted" by fresh reinforcements from without instead of by depleted forces from within.

"The living body being an entity premises a system of therapeutics both physical and biochemic that acts in direct accord and harmony with physical laws and physiological functions."[1]

The founder of osteopathy was first to consider the treatment of disease on the rational basis of biochemistry. His vision of the "lesion" was more far-reaching than the mere pressure from vertebral malalignment. "Find it, fix it, and leave it alone" implied much more than the correction of the "bony lesion," for he wrote "the blood has a hundred drugs of its own which actually cure the disease."[2] Dr. A. T. Still made it clear when he hurled before an ignorant world his discovery of immunity, that the "basis of pathology is not only biological but also chemical."[2] Lane grasped this understanding of the founder's perception when he stated that "the nerves, as well as all other tissues of the body, live in an ocean of blood."[3]

No true osteopath questions that the innumerable "fixations" in spinal joints constitute pressures which impede the liberty of fluids in the neuron sheaths involved in the fixation, or that those plasma channels temporarily blocked premises malnutrition to the neuron and disturbances of tone in the tissues supplied by those neurons; for, as observed by McConnell, "the integrity of tissues depends upon structural freedom of nutritive courses."[4] It is not enough to say "leave it alone" and then *leave* it. We must see to it that Nature's circulating drug-store circulates through the protoplasm of the pathologic cell and that the cell anabolizes and katabolizes toward normalcy. You reply, yes, I accept the proclamation of science—"that the living body is truly and completely in its entire structure and function a matter of chemical composition and chemical reaction";[5] but I also believe that with proper adjustment of the nerve tissue every muscle, gland, organ or part will be insured a free circulation of blood.

That is fundamentally the concept of osteopathy as held by many of our profession. It would indeed be most laudable, if every graduate possessed even this basic principle and practiced it; but germane to a greater and grander osteopathy is the concept of an ultra-lesion, an all-comprehensive-lesion extending from the local spinal impingement to the millions of impingements on the freedom of electrons in the gemmule of the most remote cell affected by that possibly infinitesimal pressure by vertebra or ligament. In spite of the fact that few of us have been able to interpret the concept of osteopathy with the detail that was the sane and scientific thought of the originator, we must give credit to those few who have.

"As long as the osteopathic physician uses his hands in his therapy he may be called a pure osteopath. We do not mean by this, as some of the unthinking and uninformed critics of osteopathy imagine, that an osteopath must be a stupendous fool, who would attempt to stop a hemorrhage from the ears in fracture of the skull by manipulating the backbone, or who would hold that insects do not transmit disease germs, or who would deny any other known and proved fact."[6]

Dr. Still did not maintain that osteopathy was opposed to food, drink, bathing, hygiene of the teeth, nose, throat, ears, eyes or alimentary tract or to any therapy other than manipulation. To the contrary he stated that everything that gained entrance to the blood was either food or poison, and that common sense would guide most of us in programming an appropriate and adequate remedy for any disease condition.

If there is one factor that would refute the claim that the older practitioner is a better diagnostician than the recent graduate, it is the observation of the hospitals that the interne with but a few moments to devote to each patient in the receiving room has his diagnosis correct in 85% of the cases. This high-percentage-accuracy is due to the intensive study of the biochemistry of the body and the interpretation of the changes in the cells through laboratory research. It is most gratifying that our osteopathic colleges and hospitals have grasped the significance of this fundamental in the concept of osteopathy, and are even providing through the profession a postgraduate research institution with a million-dollar foundation which is to be the first of its kind in the world.

It may appear to some that I am stressing diagnostic methods to the disadvantage of methods and means of treatment. This is not true. The one paramount consideration for any physician is to relieve the sick and restore functions to or toward normal. But if he does not know the body in terms of chemistry, if he does not visualize the pathologic physiology as biochemical change, he cannot be expected to prognose or treat in terms of restoration or relief in the shortest lapse of time and with a minimum loss or waste of energy. The prognosis of a given pathology is of more vital interest to the physician than it is to the patient. True, the patient wants relief, but unless the physician possesses a full understanding of the changes occurring in the cells, in addition to a practical knowledge of the temperament of the patient and the gross influences molding every individual, the patient will wait in vain for a cure.

"Only when we can know all the conditions, causative and sequential, with their possible complications and terminations, carefully analyzing and weighing these various elements, are we prepared to really make a prognosis."[7]

Again we find confirmation in the words of McConnell for our assumption that to diagnose on a platform of biochemistry is to be the better able to prognose and treat. "Osteopathic science will add just so much to the accuracy of prognosis as the sum total of the knowledge displayed by the physician . . . for in no school does the physician get

into as close touch and understanding of the actual condition of the patient's disorder as in the osteopathic school."[8]

(To be continued)

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Food Prescriptions*

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Next to the correction of the mechanical lesion there appears to be nothing of greater importance to the welfare of the patient than the care exercised in prescribing foods for the individual case. Food prescriptions should follow a careful examination of the patient, using both the routine clinical and laboratory methods in order to determine which food elements may be lacking or in excess.

In the osteopathic concept the sixteen elements necessary for the body's maintenance are supplied through food, air and water, never from the drug store.

Foods are prescribed for definite purposes. A maintenance ration that will rebuild tissue destroyed during ordinary catabolic processes is the matter of most importance. Then too, consideration should be given to supplying deficiencies, decreasing oversupplies, adjusting the functional capacity of one or more organs to assist an organic function to "catch up," or to provide immunity.

The prescription should give specific directions as to feeding intervals, which may vary anywhere from a few minutes to a prolonged fast. Attention needs to be directed to the manner and thoroughness of mastication. Specific information should be given as to the temperature at which foods should be eaten. Details of combination in which foods are best utilized by the body with the least tax on the digestive forces should be outlined for each individual case. Example of combinations which render digestion more difficult should be given to the patient, also.

Not only should the combinations be given, but the order in which they should be eaten. When acids are used at the beginning of a meal, as in the customary American breakfast begun with orange or grapefruit, the secretion of hydrochloric acid in the gastric juice is not encouraged, and the fruit juice taking the place of the normal hydrochloric acid leads to a greater or lesser degree of fermentation, whereas, if the fruit acids are taken at the end of the meal they supplement the hydrochloric acid in its action.

The amount and kind of fluid to be taken with food, the total for the twenty-four hour period, and temperature at which it is taken need and should have consideration. Cold fluids taken into the stomach require animal heat or energy to raise them to the temperature of the body, while hot drinks not only conserve this energy, but in a measure contribute their energy to that of the organism.

Specifications should be given as to the condiments or dressings used, including salt, spices, vinegar, sauces and gravies, each being prescribed or forbidden for specific reasons.

The adjustment of meal times in relation to exercise requires more or less definite regulation in each individual case. Frequently acute indigestion may be traced to the taking of food when the patient was tired or exhausted and the capacity to digest wholesome foods was thus diminished. Rest before eating is often as pressing a requisite in some cases as rest after a meal in others. After a prolonged rest, as a night's sleep, in cases where there is suboxidation (the oxidation process being less active during sleep) it is often an advantage to delay the first meal until mid-day or at least several hours after rising time, so that the oxidation process will have had time to "catch up" in the oxidation and elimination of the suboxidized products which have accumulated during the night's rest. This is of advantage in all suboxidation states and finds its advocates in those following the "no-breakfast" plan.

In the kinds of foods prescribed we have our choice from the animal, vegetable and mineral kingdoms. The quantity of food may be left to the taste or may be definitely weighed according to the requirements indicated. The carbohydrate and total caloric intake of a diabetic, as an example, needs most careful regulation.

The manner of preparation should be specified for the complete enlightenment of the patient. If food is to be used raw it should be so stated, or if cooked, the manner of cooking should be detailed—whether it is to be baked, boiled, broiled, stewed, and so on. If preserved food is permitted, the manner of such preservation must often be described—whether dried, preserved in vinegar, fermented, preserved in sugar, in a vacuum or with chemicals, including salt, oil, creosote, spices and drugs.

There are certain general principles to be followed in giving diet prescriptions in the different diseases, and these, without going into detail, will be given here for some of the most common disorders.

CONSTIPATION

Decrease: protein, refined starch.	Increase: cellulose, coarse sugars, vegetable acids.

AUTO-INTOXICATION

Decrease: protein, fats.	Increase: vegetables, fruits, whole grains.

CATARRH

Limit: carbohydrates, fats, proteins.	Increase: minerals, acid fruits, greens, whole cereals.

ACUTE INFECTIONS

Fast, Liquids: fruit juices, vegetable broths.	Gruels: whole cereals, vegetable soups. Solids: gradually resumed.

*Lecture given before Gastro-Enterology Section, Louisville, 1926.

TUBERCULOSIS

Exclude refined foods. Decrease: carbohydrates.	Increase: protein (raw), minerals, lime, silica, iodine, acids.

OBESITY

Decrease: fats, carbohydrates.	Increase: greens, fruits. Use whole cereals.

FOCAL INFECTIONS

Decrease: fats, carbohydrates.	Increase: greens, fruits. Use whole cereals.

ACIDOSIS

Mineral Type: increase mineral bases.	Suboxidation Type: decrease fats and carbohydrates.

The most promising sources of the different chemical elements required by the body are found in the following foods:

Calcium: Molasses, tomatoes, figs, maple syrup, egg yolk, bran, beans, nuts, olives, chard, cheese, milk, berries, whole cereals (low).

Potassium: Figs, tomatoes, pineapple, prunes, dates, currants, raisins, spinach, beans.

Phosphorus: Wheat germ, wheat bran, oatmeal, cheese, egg yolk, fish (salmon, salt water), yeast.

Iodine: Sea foods, spinach, yeast, wheat germ, lettuce.

Iron: New Orleans molasses, maple sugar, egg yolks, bran, beans, whole wheat.

Fluorine: Butter, cheese, egg yolk, cream, whole milk, greens, glands (liver, kidney, sweetbreads).

Sulphur: Beef, chicken, eggs, turnip, gluten flour.

Chlorine: Vegetables, salt, sea foods.

Sodium: Vegetables, salt, sea foods.

Magnesium: Cornmeal, rice, oatmeal, beans, honey, bananas.

Silica: Outer coats of seeds and grains.

Manganese: Fruits—especially acid fruits.

Oxygen: Air, water.

Hydrogen: Water, fats, oils, sugars, starches.

Carbon: Fats, oils, sugars, starches.

Nitrogen: Milk, eggs, meat, wheat, peas, beans.

The body is made up of these sixteen elements in combinations that are often exceedingly complex—and each bears a rather definite ratio to the others. If one or more are deficient or one or more in excess, or if the ratio of any one is disturbed, disorder may be expected to follow. It is the duty of the physician to appraise the state of the elements in any given case and formulate a diet prescription accordingly.

The Value of Calcium in the Diet

Let Us Adopt the Slogan—"A Quart of Milk per Day for the American Child"

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In the growth process of the body we are prone to overlook a substance which is vitally concerned with the fundamentals of structure. It is not only our individual loss that we are concerned with, but as physicians we are responsible for the physical enlightenment as well as the health of those who place in our hands the safeguarding of their bodies. We have not the same privilege as the mechanical engineer who, upon making a slight error, can tear down and start over again. A mistake at the start may affect the whole future structure. How many builders would begin operations without some idea as to the plans for the structure and knowledge of materials to be used? Yet the majority of people are attempting the building of a coming generation with very inadequate knowledge of the materials required. How else could it happen that one-half of the American people are suffering from calcium starvation unless it is that they do not realize the importance of this great factor? They would not wilfully deprive the next generation of its rightful heritage of health.

Calcium is not a fuel food; it has no caloric value but it constitutes three-fourths of the mineral content of the body. Ninety-nine per cent of the calcium in the body goes to make firm the framework. Calcium has the following important functions:

1. It gives solidity to the bones. The amount of lime in the bones is so great that a burned bone retains its form even after the animal part has been wholly destroyed.

2. It regulates metabolic processes and maintains the neutrality of the blood.

3. It aids in preserving the economy of iron in metabolism.

4. It helps to maintain muscle tone; without calcium the muscles become flabby and weak.

The small amount of calcium in the blood has a stimulating influence upon the cardiac muscle and is absolutely essential to maintain the normal beating of the heart.

The calcium in the blood is also necessary to enable the blood to clot as a protection in stopping the flow from a wound, our reason for giving calcium salts before an operation.

Phosphorus follows calcium closely in the various foods. It is also associated in many of the body functions just mentioned. Both after being metabolized are excreted largely by way of the intestines.

The injurious effect of an insufficient intake of calcium is of course more noticeable in the child than in the full grown adult. What happens when the intake of calcium is below the requirement? Usually, growth is retarded. Sometimes growth in size occurs while the normal development of the bone is interfered with. McCollum noticed that in his rats, whose growth was retarded by diets consisting too largely of seeds, there was a tendency for the skeleton to lose its long, lithe form and become more or less abnormally stocky, with frequent gross appearances suggestive of rickets.

Hess, Parke and others recognized two types of rickets—low calcium and low phosphorus, including a low calcium-phosphorus type, which is simple osteoporosis. Both forms of rickets are

recognized to be a perversion of the mineral metabolism.

Concerning the low calcium type, which produces tetany, Collip and his coworkers now assert with confidence that we possess a therapeutic agent derived from the parathyroid gland which produces profound changes in the calcium metabolism, so that when dogs are deprived of their parathyroid glands the resulting condition of tetany is relieved by the injection of this substance with a coincident return of the calcium metabolism to normal. Following the demonstration of these facts, Collip and Leitch described the above treatment of a severe case of infantile tetany in a child, pronounced rickets, with successful results. Davidson records the relief of tetany in a young girl with myxedema, nephrosis and tetany, by the combined use of thyroid and parathyroid extracts.

Low phosphorus rickets have been produced experimentally at will, by simple changes in the phosphate content of the diet, all other conditions being exactly the same. The "rickets-producing" diet in this case consisted of patent flour to which had been added certain salts, including a salt of calcium. Without a corresponding supply of phosphorus, rickets developed; with it rickets was prevented.

In other cases, arrested development in infancy may be due to an insufficient assimilation of calcium from the food or to a diet inadequate in calcium content.

Voit fed pigeons on a "lime deficient" diet and upon killing them found that the leg and wing bones contained the normal amount of lime while the bones of the skull were almost wholly deprived of lime. Evidently the body had sought to maintain the normal blood content of calcium by robbing those parts of the skeleton from which it could best be spared.

The Nutrition Laboratory at the Battle Creek Sanitarium under the direction of Dr. Helen S. Mitchell is constant evidence of the dietary role played in the production of rickets, tetany, spinal curvature and other structural defects, in the Albino rat. (This animal is used because its life cycle is thirty times more rapid than that of man, greatly facilitating the field of experimental work.)

It appears in many instances, however, that a number of intervening factors may prevent the bone from receiving phosphorus and calcium in the same relative abundance in which they may be contained in the food; both chemical evidence and laboratory experimentation have shown that without special direct attention to the mineral content of the food, rickets may often be prevented or cured by the antirachitic vitamin of cod liver oil or by the direct rays of the sun or other form of ultra-violet irradiation. Treatment with either the vitamin or the ultra-violet irradiation has been found to maintain or restore the normal concentration of phosphorus and calcium in the blood. Hence, the antirachitic vitamin of the cod liver oil and the ultra-violet rays of direct sunlight or of the mercury-vapor quartz lamp are said to exert their antirachitic effects through enabling the body to effect a better mobilization of its calcium and phosphorus supplies.

Sherman points out to us that the calcium requirements of women are greatly increased by maternity. The need for an abundance of calcium for the rapidly growing skeleton of an infant is obvious. During the last ten weeks of pregnancy and for several months after childbirth this demand of the child is satisfied through the mother whose calcium requirement is thus greatly increased. The weakening of the bones and teeth which is known to be a common accompaniment of pregnancy and lactation is held to be the result of withdrawing calcium from these structures to meet the nutritive requirements of the fetus or the nursling. We must not overlook the fact that it may be necessary to continue high calcium feeding for some time after the cessation of lactation in order to replace the calcium which the mother has been called upon to sacrifice.

The greatest need for calcium is during periods of rapid growth and when there is an increased demand because of lactation. However, calcium is also required by the adult for the repair of worn-out tissue and as a normal blood constituent, but naturally in much smaller quantities. Recent observations indicate that some children are born with a predisposition to rickets because of faulty parental nutrition, and frequently these unfortunate individuals are nursed by mothers whose milk is of a poor quality for the same reason. A deficiency in the mother thus prevents an adequate storage of the same elements in the offspring, with a consequent lessened resistance to disease in which that factor might be involved.

Infants and young children require two to three times as much calcium in proportion to their weight as do adults. Their teeth are the first tissues to bear evidence of deficiency disease, because we cannot see the bone condition except by means of the roentgenogram. The astounding figures given by dental clinics regarding the occurrence of decayed teeth among the younger school children should certainly stimulate us to action. In one city, by educational preventive treatment, decay was reduced sixty-seven per cent in six years, proving that this is not a mere theoretical proposition.

It has been estimated as a result of much ex perimental study that one gram of calcium per day is the necessary requirement, both for adults and for children, as in the growth period the demand is considerably increased in proportion to the size of the individual and that the optimum intake is supplied by giving a quart of milk daily, as pointed out editorially in *The Journal of the American Medical Association* in discussion of the above mentioned experiment: "The dietary rule of a quart of milk each day for every child is much more than a precept based on individual opinion or drawn by analogy from the results of feeding experiments with lower animals; it now rests on scientific evidence obtained by extensive experiments upon the children themselves."

It is indicated that the child needs 1.16 grams phosphorus per day for optimum growth; about one and one-half times as much phosphorus as is needed by a full-grown man for maintenance. This is likewise supplied by one quart of milk daily.

During these same experiments various vegetables were tested to compare their calcium utilization with that of milk. While many were very rich in calcium it was found that the children utilized

the calcium of milk to a better advantage than they did that of vegetables. Though there is no doubt as to the desirability of a liberal addition of vegetables in the diet, they should not be allowed to reduce the amount of milk consumed.

The average American dietary of meat, potatoes, white bread, butter and sugar, with a minimum of milk and vegetables, is notably low in calcium as well as in some of the other minerals and vitamines. On such a diet rats develop characteristic rickets. Milk and milk products rank first among the list of high calcium foods. Milk contains more calcium than an equal quantity of saturated lime water, and yet how frequently one sees a quart of milk delivered to a family where there are several children. In the accompanying table a few common foods are listed in the order of their calcium content. Note where the chief articles of the average American dietary occur in this list. It must be remembered however that certain foods are habitually consumed in larger quantities than others and thus actually provides a greater supply of calcium than an apparently richer source.

It is an interesting fact that the foods rich in calcium are invariably in their natural state or have been merely dried by evaporation; not one has been through any refining process. Of these foods low in calcium several have been subjected to so-called purification processes for the purpose of producing finer texture or lighter color which the public wrongly believed to be due to an improvement. Compare for example the calcium content of granulated sugar with that of molasses made from the same sugar cane. In refining cereals the miller removes the bran of the germ in which the larger part of the mineral is found and sells it as cattle feed, leaving for human consumption that white inner portion devoid of minerals and vitamines and lacking the richer flavor. The housewife under modern methods of cookery usually succeeds in extracting and discarding those elements from vegetables. Peeling removes part of the vital elements, boiling in water extracts most of the remainder of the minerals—and then the water is poured down the sink!

These are only a few of the examples of the reasons why some pregnant women suffer from bone disease and decayed teeth and why some of our children are not building the firm strong bodies which they should have. What is the remedy? A more universal knowledge of food values and care in planning menus.

An excess of calcium and phosphorus can do no harm. It provides a factor of safety which is always advisable in human nutrition and extremely advantageous in a disease such as tuberculosis where a walling off of the tubercle is a necessary process and brought about only by the calcium salts in the blood.

Meat is exceedingly poor in calcium and is, notwithstanding its high protein and phosphorus content, a very one-sided and inadequate source of "building material." Milk is nearly as rich in phosphorus as lean meat and many times richer than any of the meats in calcium. The fruits in general are fairly rich in calcium, while some of the green vegetables are strikingly so.

Milk in some form is perhaps the most reliable of all sources of food calcium. Skimmed milk has all its original calcium content and should not be considered a waste product. This is an interesting factor in the diet of reducers, who need their quota of calcium but not the cream, containing the fat. Milk should not be considered merely a beverage, but a food of superior value; therefore, let us make "A quart of milk a day for every child" our slogan to improve the health of our children.

TABLE OF FOODS HIGH IN CALCIUM

(Grams Per Ounce)

Cheese, cream	5.7
Cheese,	4.28
Cheese, cottage	4.18
Mustard greens	3.0
Turnip tops	2.12
Beans, soya	2.0
Hazelnuts	1.75
Almonds	1.46
Molasses	1.29
Watercress	1.15
Figs	0.99
Beans, dry navy	0.98
Egg yolk	0.84
Bread, Boston brown	0.79
Cauliflower	0.75
Olives	0.74
Wheat bran	0.73
Milk, whole	0.73
Maple syrup	0.65
Walnuts	0.54
Pecans	0.54
Currants, dry	0.50
Celery	0.47
Rutabagas	0.45
Eggs, whole	0.43
Oatmeal	0.42
Spinach	0.41
Dates	0.39
Raisins	0.39
Turnips	0.39
Carrots	0.34
Prunes, dry	0.33
Raspberries	0.30
String beans	0.28
Cabbage	0.27
Oranges	0.27
Strawberries	0.25
Onions	0.20
Beets	0.17
Graham bread	0.17
Peas, green	0.17
Macaroni	0.13
White bread	0.09
Butter	0.09
Egg whites	0.09
Potatoes	0.08
Cornmeal	0.07
Watermelon	0.06
Tomatoes	0.06
Beefsteak	0.05

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Strange as it may seem, it is nevertheless true, that a majority is generally wrong. Where the leaders of thought stand today the rank and file will stand tomormorrow, but tomorrow the leaders will not be standing where they stand today; they will have advanced to new heights. Any movement worthy to live is an advancing army, with the officers riding far in advance.—C. A. W.

Peter B. Kyne wrote: "The morale of an organization is not built from the bottom up; it filters from the top, down."

Functional Heart Disorders *

Contrasting Cardinal Symptoms and Signs with Those of Organic Heart Disorders

GRACE R. MCMAINS, D.O.
Baltimore

Since functional heart disorders comprise about ninety per cent of all heart affections, to differentiate their symptoms and signs from those of organic heart diseases in the time allotted is a difficult matter. However, I shall endeavor to touch on the points more easily confused in the classification of these two types of cardiac disturbances. Owing to the fact that I am by no means an authority on this subject, I am not seeking to give anything original. Most of my presentation is the result of observations from such authorities as Sir James MacKenzie, Sir Wm. Osler, Francis Heatherly, Richard Cabot, Lewellys F. Barker and Robert H. Nichols. To the last I owe much of my own practical understanding of heart diseases, having taken his courses in physical diagnosis, and studied in his most unusual and interesting clinics in Boston.

In distinguishing the cardinal signs and symptoms, we must always consider the whole clinical picture. A hasty, ill-considered diagnosis may bring discredit not only to one's self but to the whole osteopathic profession. As the old Japanese proverb advises, "The shortest way is the way round," and although it takes time to make a thorough examination at the first visit, if it is not done then, it generally ends in not being done at all.

It is well to extract from the patient all the information you can as regards symptoms and history before examining, as delay after being stripped may cause so much shivering as to make auscultation valueless. It is well to ask the questions always in the same order, for ease of remembrance. Since, in the patient's estimation, pain is usually the most important symptom, it may well be the first question. Find out when it occurs, what brings it on, where it is first felt, if it spreads, to what region it extends, and if it is severe. Generally speaking, pain in the young, however severe and widespread, is of less importance than pain in the old. Pain that from the beginning of the illness has come on at night when at rest, just as frequently, or more so, as during exertion through the day, points to effort syndrome, or neurocirculatory asthenia, formerly called cardiac neurosis, or to some toxemia which has resulted in a poisoned heart. On the other hand, pain which at first was only felt occasionally after exertion, but which now comes on oftener and after less exertion and at night as well, is serious even though it is not particularly severe. When an elderly person locates his pain by passing his hand across his sternum, it calls for serious consideration even though the pain be slight, as it may prove to be angina. In effort syndrome, the situation is generally precordial or along the left costal margin, the commonest spot being in the vicinity of the apex beat.

SYMPTOMS

Dyspnea is one of the commonest symptoms in heart disease, whether functional or organic. In most cases it forms a valuable test of the heart's efficiency. The worse the condition of the heart, the less exertion the individual will be capable of, without getting out of breath, until in the most severe cases there will be dyspnea at rest. The mechanism of respiration is controlled by three factors: (1) By the condition of the blood circulating through the respiratory center in the medulla; (2) by nerve influences conveyed to it from the lungs by the vagus; (3) by impulses from above through the emotion and the will. Therefore there are many conditions beside a disordered heart which may cause dyspnea. When it is due to deficient aeration of the blood by the lungs, it is accompanied by general cyanosis of the body, the greater the deficiency the more marked the dyspnea and cyanosis. Dyspnea, accompanied by general cyanosis due to heart failure, will be directly proportionate to the cyanosis. In such cases there are always other signs of engorgement, such as venous pulsation, enlarged and tender liver, and edema.

Frequent mistakes are made in the differentiation of chest conditions. Early tuberculosis may be mistaken for effort syndrome. In other cases, phthisis may be correctly diagnosed, but the aortic regurgitation which caused the malnutrition and allowed the development of the tubercular infection is overlooked. A case recently came into my hands which had been diagnosed and treated for aortic regurgitation. To be sure, there were the cardinal signs of aortic regurgitation present, but the patient's great loss of weight, marked toxemia, and temperature, together with the physical signs in the lungs, suggested the need for sputum examination and the roentgen ray. The sputum proved positive, and the roentgenogram showed a fine fibrosis in both apices extending down well over the upper lobe in the left lung. Time could have been saved and a better prognosis made possible, if the whole case had been more thoroughly studied by the former physician several months before. Cases have been sent to tubercular sanatoria because of hemoptysis and other signs found in the lungs when a more thorough examination of the heart by x-ray proved them to be heart failure with congestion due to fully developed mitral stenosis.

In early cases of mitral stenosis and aortic regurgitation, the exercise tolerance is often good and dyspnea almost absent. In such early cases, however, if dyspnea is marked, it will generally be found due to effort syndrome complicating the condition as shown by other symptoms of the syndrome being present, perhaps the presence of sinus arrhythmia. Recognition of effort syndrome in such cases is important, as proper treatment will improve the patient's condition. Dyspnea passing off when the patient falls asleep is characteristic of hysterical dyspnea, the breathing is rather shallow, irregular and rapid. When dyspnea continues during sleep it is characteristic of uremic dyspnea. Orthopnea is

*Delivered before Thirtieth Annual Convention, Louisville, 1926.

found in patients suffering with heart failure with congestion, and is, of course, serious. A young person who complains that he cannot sleep unless his pillow is high might be a sufferer from effort syndrome and, unless this fact is borne in mind, undue significance may be attached to this symptom.

Palpitation is frequently complained of by neurotics, or cases of effort syndrome, in whom exertion will be described as causing dyspnea, palpitation, pain, and dizziness at the same time. Such cases will complain of attacks coming on through excitement. When the patient complains of palpitation coming on suddenly without cause, it is well to find out how it terminates, so as to eliminate the possibility of paroxysmal tachycardia. Thumping in the head and neck at night should raise suspicion of aortic regurgitation. On the other hand, it is a frequent symptom with deaf people and is sometimes relieved by removal of wax from the ears. Vertigo is of great diagnostic value, as it is met with frequently in both functional and organic cases. In effort syndrome its importance will depend on the patient's occupation. It would be of no importance to a clerk but of great importance to a window cleaner or a steeple jack. The cause is a transient anemia in the brain. It is characteristic of arterial degeneration in elderly people, and if accompanied with headache is a serious sign. It is common in cases of aortic regurgitation and mitral stenosis. Syncope is common in effort syndrome, and also occurs in heart block as part of the Adams-Stokes' syndrome.

Excessive sweating about the axillae and palms and flushing generally spreading from jaw to side of neck, frontal headaches relieved by lying down or going into the open air are all typical of effort syndrome. Headache on awakening, relieved by breakfast or early cup of tea, is suggestive of hypertension and renal disease; the headache is often occipital. Coughs are mostly pharyngeal in origin. Effort syndrome cases often complain of an irritating cough on first going to bed. In young persons search should be made for signs of tuberculosis, and a brassy cough should immediately arouse suspicions of aneurysm.

In former years (and even sometimes in the present) in examination of the heart, the diagnosis was based on what was heard rather than on what could be seen and felt. The stethoscope should be used last in detecting signs, otherwise one is apt to become so engaged in an outstanding murmur that some of the cardinal signs which are the best aids to correct diagnosis are overlooked. In determining the heart's normalcy, the size should be noted. The size and position vary somewhat according to the size and type of the chest. In the average-size adult the apex should be not more than 9½ cm., or 3¾ in., to the left of the mid-sternal line and in the fifth interspace, by sight, palpation and percussion. The left upper border should not be above the third rib, and the right outer border more than 3½ cm., or 1¾ in., from the mid-sternal line in the third interspace. The upper border is determined by percussion and x-ray. Width across the great vessels by percussion should not exceed 6½ cm., or 2½ in. Note the presence of venous pulsations in the neck.

Thrills, which are best felt by placing the palm of the hand lightly over the first aortic area at the base, and over the apex, are always indicative of stenosis; but according to clinical records during the war, it was obvious that many physicians were not acquainted with the character of a thrill, which is best understood by feeling a cat's throat while it is purring; the only difference being that the cat's purr is continuous, whereas the presystolic thrill is intermittent.

By auscultation note the rhythm, character of heart sounds, and lastly if there are no murmurs. The accentuated first sound at the apex usually means mitral stenosis, but the severe pounding against the chest wall by the left ventricle in thyrotoxicosis will produce a loud, booming first sound at the apex. Up to almost thirty years of age the pulmonic second sound is increased in pitch over the aortic second in normal individuals. After thirty-five years of age, if the pulmonic second sound is increased, together with enlargement, irregular force and rhythm, and a diastolic murmur, it means structural heart disease. Pulmonary sclerosis and tuberculosis or pneumonia, of course, cause an increased pulmonic second. Murmurs without these signs mean nothing in so far as organic disease is concerned. Most all functional murmurs are systolic in time, but care must be exercised in the timing of murmurs, as heart sounds are unreliable in the timing of murmurs, especially when the heart is irregular. Frequently in angina pectoris no murmur is heard at all, while in effort syndrome the most striking thing is the murmur and the complaint.

Cardiorespiratory murmurs are purely functional. They are produced by respiratory movements and are best heard at the end of inspiration in certain areas, perhaps under the left clavicle, near the apex or below the left scapula. They are often mistaken for cogwheel breathing as found in lung disease.

Hemic murmurs are associated with anemia and, although only functional, are frequently confused with organic heart disease. The clinical picture will suggest the need for a blood smear which together with the normal outline of the heart's size will make the diagnosis less difficult.

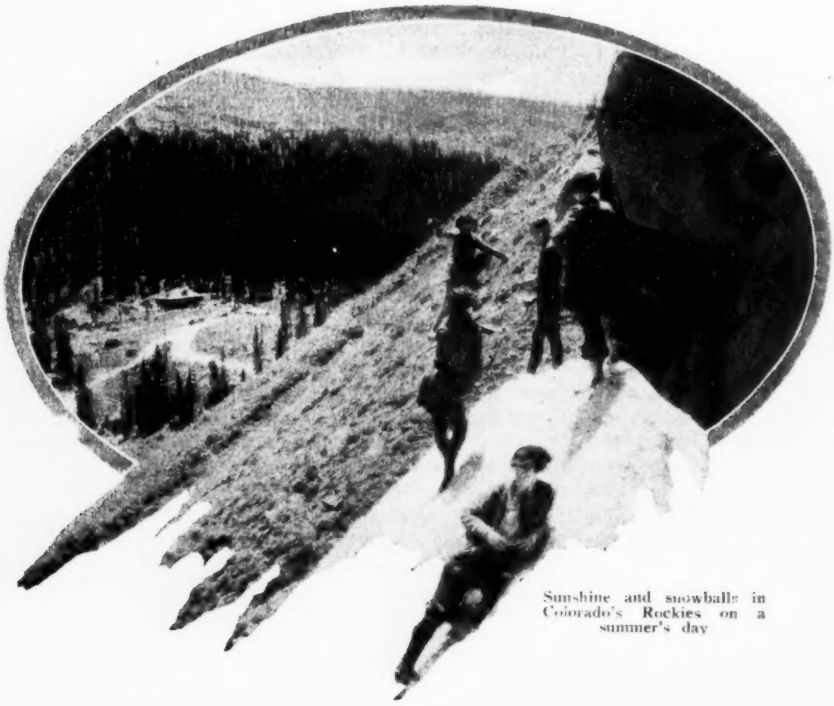
Tachycardia is found in both functional and organic conditions. A physiologically rapid heart does not mean definite damage to the myocardium, but when there are organic lesions from any cause, the rapid action hastens heart failure. Bradycardia is frequently physiological. When it follows acute infectious diseases it is a good sign. The rapid heart is more to be feared in such diseases. The slow heart is only to be feared when there is partial or complete heart block.

Sinus arrhythmia is a type of irregularity associated with youth. It is characterized by inspiratory acceleration and expiratory retardation. As the cat's purr illustrates the thrill, so does a dog's chest exemplify a typical sinus arrhythmia when he breathes. Extra systole is also usually felt by the young. It is unimportant in the young. Paroxysmal tachycardia is a phenomenon arising out of a normal rhythm, signifying some myocardial defect, and is not so benign as extra systole, although not regarded as fatal.

If we try to acquaint ourselves with the most important of these signs and symptoms of the scien-

tific observations of the past, we should be able to improve our records in diagnosis. It is well to remember the old Chinese proverb, "One flea cannot lift the coverlet," so we should not found our diagnosis on one sign or symptom to the neglect of the others. How frequently patients are made to suffer for the ignorance of physicians in wrong diagnosis! The only remedy for mistaken diagnosis is more knowledge and experience.

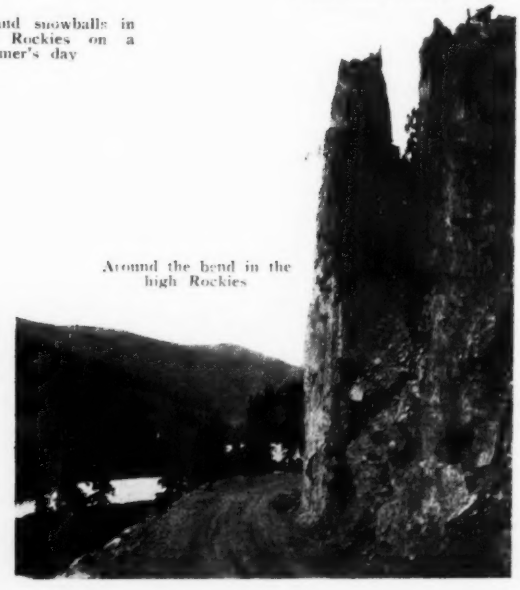
Here I should like to add a word of endorsement for the endowment campaign for the equipment of better research facilities, and the founding of a postgraduate school where practitioners in the field may have access to clinical study of the signs and symptoms in all classes of diseases. This can only be done satisfactorily in institutions and under competent instruction. Our profession, in general, both past and present, has been regarded by the public as incompetent in diagnosis. Public confidence in this respect can only be gained by more thorough and scientific methods in diagnosing the cases that come to us. Practitioners in the field can only keep abreast of the tide of great scientific advancement in modern methods and findings in diagnosis, by the study of clinical cases which are under the guidance of trained investigators in this line. If you want to do your bit for humanity, as well as for osteopathy, get behind this most worthy movement.



Sunshine and snowballs in Colorado's Rockies on a summer's day

Buffalo in Denver's Mountain Game Preserve

Platt Ave., Colorado Springs



Around the bend in the high Rockies

Photos by courtesy of Denver Tourist Bureau and Colorado Springs Chamber of Commerce

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Give me liberty to know, to utter and to argue freely according to my conscience, above all other liberties.—Milton.

WHY OSTEOPATHY?

We cannot do better at this day in osteopathic history than take cognizance of our bearings and take new soundings. It is essential that we, as a thinking progressive body of workers seeking to know and work out more perfectly our science, should often take time and occasion to consider whence we came and get the background of the how and why of the profession we practice. Only so can we clearly see the stars and steer a direct course toward definite goals.

Our writers are most of them men of affairs, busy with practice and with eyes to the case in hand. Our able censorship committee has gathered in additional material of real value, but let us have more with the note of thought and conviction. Hence it has been the purpose of the editor to give the readers of these columns from time to time, not alone authoritative statements from living writers like McConnell and Burns but also from men like Whiting and Lane and Still himself. Recently editorials from Clement Whiting's pen were much read and appreciated. This month we give some fundamental facts from a scientific searcher of truth, a man who gained high station in our own profession, one whose name and works stand out in the history of the science of healing and are recognized in the literature of the so-called "regular" profession. This man is Michael A. Lane, so much of whose writing is due to Dr. H. S. Bunting's encouragement.

How to educate a community, how to build a practice, how to diagnose a new and better way of adjusting the upper ribs and vertebrae or the pelvic twist or a case of pneumonia, are all important; but if we as osteopathic physicians are to realize our part in the great healing art and accept the responsibility for osteopathy's future contribution to the world, then must there ever be kept before our eyes and sounded in our ears the how and why of the historical setting and development of our science, otherwise the vision becomes dim and we begin to hunger for and drift back to the fleshpots of Egypt.

When a man like Lane speaks of osteopathy and the work of its founder the scientific world must perforce give heed. And our own profession, those older in the work and the recently graduated, eagerly listen.

Dr. Michael A. Lane came to Kirksville with an unbiased scientific mind to put osteopathy in the test tube, as ready to prove our science wrong as to prove it right. It was only on that condition and understanding that Dr. Lane accepted the offer to enter our school. Those who had the privilege of working with Lane or observing his research efforts know with what unbounded energy and enthusiasm he labored through days or nights to prove or disprove. Group after group of animals, injected with pneumococci or other germs, were watched and studied in scientific fashion until one day he came rushing up to a little group of friends and with boyish enthusiasm declared, "We have it! We have it! Osteopathy is ten times more effective in overcoming infection than is any other method."

That he was satisfied beyond all question of doubt, his theory and practice, his writings, clearly disclose.

From the book "A. T. Still, Founder of Osteopathy," by M. A. Lane, we take the following authoritative statements:

In order to comprehend osteopathy we must comprehend the work of Andrew Taylor Still, and to that end we must know in a clear way something of the immediate predecessors of the man, together with something of the medical world upon which the eyes of A. T. Still opened and into which they looked with the sharpest criticism of the ages. * * *

Previously to Still, medical practitioners had honestly tried to reform their art, and suffered the fate of the reformer in consequence. The first great reformer in what we call modern medicine was Flaubert, the French physician of the latter end of the 18th and the beginning of the 19th century. Medicine in his day was a procedure of purge, vomit, blistering, bleeding, and a mixture of materia medica drawn from nauseating substances of all kinds, and from plants, the virtues of which were based upon absolute superstition—the entire art in that day being but slightly more scientific or civilized than the practice of the savage tribe with its medicine man. * * *

I sometimes think that the spirit of Andrew Taylor Still will return upon many osteopaths who have lost faith in that old backbone lesion as the main causative factor in disease, and will annihilate their skepticism. These modern skeptics, these doubters of the truth of Still's backbone lesion theory of disease, live and grow prosperous on that theory while they doubt the truth of it in their hearts.

Let such doubters and skeptics remember that the earlier osteopaths succeeded in winning the faith of the public in osteopathy only because they preached that backbone lesion day and night. Let them remember that if it were not for that imperial generalization of A. T. Still there would be no osteopathy today. Let them remember that every patient they treat, they must treat by the backbone method, or lose that patient. Let them remember that every new patient that comes to osteopathy for treatment expects that treatment in the main. (I am not now speaking of sprained ankles, broken noses, or obvious traumatisms in parts other than the spine. I am speaking of diseases in general.) What treatment have you, gentlemen, for diseases in general other than spinal treatment based on Still's lesion? And if you point to the glorious record of osteopathy, do you not point to the osteopathic spinal bony-tissue lesion as the cause of that record? And if you win your share of success by treating the spine are you not at least an unintelligent operator (if not a self stultifier) when you repudiate the great secondary principle of which osteopathy consists? Are you waiting until the scientists of the world have put their experimental approval also on this backbone etiology? Are you waiting until, through the dictum of the world's men of science, the whole medical profession have adopted the backbone lesion as the main causative factor in disease, and have taken over your therapy to themselves—are you waiting for this until you become

real osteopaths, osteopaths in mind as well as in fingers? If you are, you can rest assured that you will not have long to wait. We are living in an age of revolution, and Still's medical revolution is at the world's door today

But again, science itself is not without the evidence that the spinal lesion is the main factor in the causation of disease. And this evidence is quite as axiomatic in the matter of Still's law of general immunity. Is it necessary to bring forward scientific evidence that spinal etiology is true? Is it necessary to do this to convince the osteopath? * * *

The osteopathic lesion as a general factor in the etiology of disease is grounded on the same scientific basis as is Still's theory of general immunity to disease and destined surely to be accepted, in the end, by specialists in pathology, a science that is utterly incomprehensible unless studied and interpreted in the light of that great law of natural selection; and lastly by the medical profession itself, the individual members of which are trained by these specialists in the fundamental sciences pertaining to the structures and the work of the animal body. But before Still's spinal lesion can be accepted by the medical profession as the main causative factor in disease—a cause that interferes with the so-called "normal" conduct of the body—that spinal lesion in all its significance must be studied by the zoologists, the physiologists, the physiological chemists, the pharmacologists, and the pathologists of all kinds, and its importance in the life history of races mastered and understood.

There is no general therapy today, there never has been a general therapy, excepting osteopathy, based on these two great generalizations of A. T. Still—the law of the general immunity of organisms to so-called disease and the law of the spinal lesion as the main ultimate etiological factor in that great tribe of animals called the vertebrates.

But you may say, how about the vast hordes of animals that are not vertebrates, that have no backbones? Are they to be without therapy? Did not Still think of them, too, in his grand scheme of healing?

The answer is simple. He did not. Still had in his hands only a man. But you will observe that the invertebrates, plants as well as animals, are in perfect harmony with the law of general immunity which Still announced for the same species. A. T. Still was not a "materialistic" thinker. He believed, as was natural in his day, in a kind of "divine" supervision of nature, or perhaps in the divinity of nature itself—a belief or conviction to which many men of advanced science are coming back today, and so forward has become the scientific mind that a Thomson (Kelvin), a Ramsay, a Becquerel and a Still could meet on common ground and understand one another's philosophical conceptions of nature and the "soul" of nature. The very fact that Still in his science of disease and its remedy did not take into account the invertebrate world and calculated chiefly if not not wholly the human element, lends additional value to his discoveries. Science has demonstrated his law of immunity in all living things, as well as in man. If what he held of man be true, it must be true for all other forms of life. Were it not true for all other forms, it could not be true for man. The very test of its truth in the case of man was its universal application to all living things. And in the past 25 years it has been proved universally true by the laboratories of Europe. His theory concerning the spinal lesion as the main primary causative factor in disease must stand a similar test. It must be true not only in the case of man, but also in that of all other vertebrates. And he who adequately studies comparative pathology in the light of the law of natural selection will not for one minute combat the theory of the spinal lesion in that etiological sense because he perceives the necessity of its truth. To these osteopaths who have doubts as to the virtue of that theory as a primary conception in their art, I would recommend a careful study of the literature of evolution and comparative embryology and can guarantee them that their convictions will then square with their practice. * * *

When Dr. Still was beginning to see clearly through his newly formed ideas of therapy and the causes of diseases in general, the science of modern pathology was in its infancy, and the science of bacteriology, as we know it today, was as yet virtually undreamed of; the science of physiology was only just beginning to show its first and broadest outlines; and the sciences of histology and embryology were only beginning to be understood in their more startling details; and we can say with absolute truth that Dr. Still was the only man in America who could in any way whatever be regarded as being abreast with the spirit of Europe; rather let us say he was, in many of his primary conceptions, forty years ahead of Europe and his age, a fact which we will try to show here, and a fact which will be amply recognized in the history of medicine as it will be written in the time to come. * * *

Like all great original thinkers, Dr. Still had theories for almost every disease and function of the body, and many of these theories were crude and incompetent, just because the then state of the sciences he dealt with was still crude and incompetent. In fact, when Dr. Still worked out many of his theories of disease, the real causes of these diseases were wholly unkown and seemingly incomprehensible. But of the various theories which, like sparks from a grinding wheel, flew off from his original and ever-active mind, at least two were of prime order and absolutely true and good. These were first, his theory of the mechanical (anatomical) lesion, and secondly, his theory of the chemical immunity of the body, both of which he put forth as the cause of disease, and both of which have absolutely stood the test of time and subsequent scientific criticism and experiment. The scientific historian of the future, who will write at a time when all prejudices of professional jealousy and hate will have been lost in the great historical perspective, will probably regard Dr. Still's greatest contribution to science as being his theory of immunity rather than his wonderful perception of the mechanical origin of so-called disease. For it is a fact that while the great conception of the osteopathic lesion was directly responsible for the grand dramatic debut of osteopathy and its seemingly miraculous cures, more recent knowledge and understanding of osteopathic treatment and its results have called attention in a striking and startling way to Dr. Still's other grand and primary conception of the body's natural immunity; a conception primary in every sense of that word; for it is upon this great fact of nature that the osteopathic lesion, with all it means to the osteopath and the diseases he works in, hangs. Dr. Still in his own mind and his own writings placed this great natural immunity of the body first in order, and then followed it up with the correction of the lesion, by which procedure the defensive and hence curative mechanism of the body was given free play. * * *

While it is perfectly true, and rightly so, that the osteopath in the past has seemed to rest his entire dependence upon the anatomical lesion (because it was in the correction of these lesions that osteopathy in the beginning worked its most amazing results), it is none the less true that by persistent effort the osteopath has swept under his control diseases which the earlier osteopaths were disposed to neglect as being, in some way or other, outside the domain of the anatomical lesion.

A PLEA FOR MORE SPECIALIZATION IN OSTEOPATHY

Our publications have been largely filled with splendid articles on various specialties such as surgery, laboratory work, electricity, exercise, dietetics, etc.

While these are essential and instructive, yet, for the good of our profession, would it not be well to have more and better articles on the fundamental principles of osteopathy, that we might create a better understanding and greater enthusiasm, especially among our new graduates?

Those of us who have devoted more than a quarter of a century of our lives to the practice of osteopathy, specializing in osteopathy alone, appreciate the fact that there is much more in osteopathy than is possible for one man to ever grasp.

Osteopathy would develop, however, if our people would devote more time and attention to specializing in osteopathy.

It seems almost a tragedy that so many of the members of our profession are overlooking this, and turning to outside agencies, many of which have proven so unsatisfactory.

The demand for osteopathic service is so great that it makes one who has an insight into the possibilities of osteopathy feel like crying out, "What shall we do?"

Many of the members of our profession seem to think it is impossible for one to be a physician without handling other methods of treatment in conjunction with osteopathy. Many times in fact I have heard the remark, "I am *just* an osteopath." I need not comment on this.

Why do people come to the osteopathic physician day after day? They come expecting osteopathic service, just as one needing surgical attention goes to a surgeon. One going to a surgeon for service does not ask or expect him to be a general practitioner, but one who specializes in surgical work, and he looks for the best surgeon obtainable. The same will apply when people come to the osteopathic physician. That being the case, why should we not have more men and women in our profession devoting their whole time to fitting themselves for the best possible service in osteopathy?

Again, I have often heard the remark that the individual intends to specialize, so that he can demand greater fees for his service.

Why not specialize in osteopathic work? Prepare to do special lines of osteopathic work, make oneself so capable and useful in the profession that his services will demand greater fees. This can and is being done by different practitioners. This would help to interest more of our young people in the study of osteopathy, and likewise stimulate a greater number of the members of our profession to concentrate on osteopathic work, as well as on other special lines.

There is no reason why we should not do this, when some of us, day after day, are doing work and getting results that cannot be obtained through any other system.

Sometimes one wonders if some osteopathic physicians were deprived of the privilege of using outside agencies, they might not develop into better osteopaths. Not that we should be afraid of these, for there is much good in them, but, on the other hand, when one is restricted (or confines himself) to one special line of work, he might make greater progress in that line than he would otherwise.

It is not a question of the limitations of osteopathy; it is not a question of "can we succeed." The question is, "will we apply ourselves and make the sacrifice to specialize in osteopathy the same as we would if we were specializing in some other particular line?"

In my judgment many members of our profession do not appreciate the significance of the finer points and principles of osteopathy. They think that if they watch a technician do a fine piece of work they should be able to immediately do likewise, without any special training on their part, whereas executing any difficult piece of osteopathic work requires just as careful study to make the diagnosis as well as do the corrective work.

Most of the work that is being done by many of our osteopathic specialists requires the same preparation and careful study as does surgical work in a delicate operation. One would not think of watching, for the first time, a difficult surgical operation, and then of going out and expecting to do the same work, without first spending time and careful study in preparation for such work. Neither can one watch the technic being demonstrated by many of our osteopathic specialists and then go out and do the same work without careful study, and possibly years of special training. That is why some of our people drift away from osteopathy and take up other methods of treatment. They simply will not apply themselves, as they would be compelled to do to succeed in any other special line of work.

During the lifetime of Dr. Still the osteopathic profession as a whole looked upon him as the greatest human mechanic that ever lived. Those of us who were blessed with the privilege of being closely associated with him, marveled at some of the work he did; a few even went so far as to express themselves that some of the things he did were miraculous, instead of expert mechanical work done by human hands. Now, how did Dr. Still acquire this wonderful mechanical knowledge and skill? He certainly acquired it by continuous study for many years, by applying himself very earnestly to his specialty, not by studying other methods of treatment which did not concern him. What he wanted to know was: "Why isn't this human machine working? What can be done to correct these mechanical disturbances that interfere with the efficiency of this machine?" A large percentage of this knowledge could not be obtained by book study alone or by watching what someone else was doing. His study was largely confined to the human body and human bones.

Any of us would give much if we could have the knowledge of the human body that Dr. Still had; yet, are we making an honest effort, in the only possible way, to obtain this?

At three different times while I was in school, Dr. Still said things that have stood out vividly in my mind and have helped me materially in my professional life. The first was: "Without normal motion you cannot have normal function." This applies not only to the bony articulation, but to the softer tissue as well (muscles, blood, lymph, etc.). The second was: "Don't be a parrot; God gave you a brain, use it." The third was: "Boys, you are all right, if you have sense enough to know when to

quit." Dr. Still made this last statement after he had observed some of the students do a piece of corrective work, then continue unnecessary manipulative work, not knowing that they had completed the task in hand.

After considering these terse statements almost daily for thirty years, I appreciate their significance more and more.

Dr. Still certainly had a vision, and he followed it in its entirety. As time goes on I am more and more convinced, that for those of us who have the determination to delve deeper and deeper, the field is unlimited for specializing in osteopathy.

My plea, therefore, is for more of our people to specialize in osteopathic work. I mean by that to confine their work to the study and corrective treatment of the human body from an adjustive and manipulative standpoint.

D. L. CLARK.

X-RAY FINDINGS IN THE DIGESTIVE TRACT

Some physicians expect the x-ray to be of more service to them in the determination of what is wrong in the digestive tract than present methods can possibly reveal. Others do not use it for information which it alone has the power to reveal. Both extremes injure the patient and the doctor. The purpose of this process is to try to bring about a little better understanding of the digestive tract in question and indirectly help to obtain a scientific "audit" of it.

In the first place, it should be understood that by means of the x-ray we do not see with the fluoroscope or reproduce on a radiograph the stomach, appendix or any other part of the digestive tract itself. We do see a shadow of a flexible casting of the viscera involved.

Sometimes this flexible filling material is gas, and one of the earlier methods of obtaining the contour of the stomach was to fill it with carbon dioxide gas, using Seidlitz powders. One courageous worker ballooned the stomach by introducing air under pressure through a stomach tube.

A media opaque to the x-ray, yet neither toxic nor absorbable, proves to be the most useful because it more closely approximates the progress of ordinary food through the tract. The nearer this can be attained, the more the radiographic series is going to tell about the patient "as is"—which is the chief end of the work. The frank ulcer or carcinoma will obtrude itself under any sort of technic, though the ones commonly sent for radiography are not that kind.

In the old laboratories of the research institute we noted time after time the effective inhibition of gastric peristalsis in cats accustomed to barium and to being fluoroscoped, when a dog was brought into the darkened x-ray room. The effect of fear is a real task to be overcome as soon as is possible. Some patients dread x-ray burns and shocks; others have been told that the meal is nauseating, while others are more or less disturbed by a darkened room and the fact that they perforce have to get along with less clothing than usual. All of these combined have a very potent effect upon the initiation of peristalsis. The fear of burning is usually pretty well overcome by the time the gall-bladder plates are taken and the light used for this radiography gives the patient a sense of location of things in the room. It is not a waste of time to put in considerable time fluoroscoping the chest and abdomen before the barium is administered. The chest sometimes shows some surprises, the location of gas pockets is more than interesting, and the patient gets used to the process. It is a mistake to give the patient the whole meal at once. The psychology of a small glass of meal, when he is expecting a quantity of from a gallon down, is good. The first two swallows give an estimation of ptosis or amount of residual dilation, which is sometimes considerably less than when the stomach is filled. The small amount, too, gives an opportunity to study the arrangement of the rugae. By the time this is done, the patient is comfortable, and the rest of the meal can be given to obtain contour, with the presence or absence of filling defects, and enough mass to demonstrate peristalsis. The filling defects due to structural pathology are "built in" features and should show repeatedly as long as there is sufficient barium in their location to cover them.

A carcinoma is a new growth—and as such occupies space as it protrudes into the lumen of the tract; consequently pushing our flexible cast back ahead of it.

A gastric ulcer is an erosion, and the barium flows into it, producing a "bud-like" projection at the site of the erosion. A destructive process sufficient to eat out a part of the gastric wall will certainly cause irritation, and one of the irritation results will be a spastic contraction of the fibers of circular muscle involved. This spastic contraction is the basis of "hour-glass" formation, with the indenture pointing to the site of the ulcer.

The changing direction of muscle fibers in the bend of the first portion of the duodenum cause—when it is the site of an ulcer—contraction in many different planes, resulting in an irregular contour of the shadow of the loop, which is as persistent as the spasticity present.

Small intestinal peristalsis, normally, is vigorous and rapid and the head of the meal is pushed ahead in proportion. If other stimuli than food action are at work, there will be an increase in action in proportion to their severity. This effect is decidedly noticeable in gall-bladder and appendiceal disease.

The colonic contour is seldom completely shown by the meal—yet the meal does give more accurate indications of position, mobility and everyday conditions of the colon than the enema gives. For complete delineation of a colon for determining presence or absence of filling defects, adhesions or tonicity, the enema is the superior method. Most diseased colons require both methods.

Because food motility is dependent on food quality as well as mass, it is well to check rapid or slow progress with the behavior under their everyday food stimulation. This can be done by combining one or

two ounces of barium with the patient's usual meals. This maneuver will not give snappy outlines but it will show what the patient does on the diet he is using and the effects of dietary changes can be measured.

Digestive tract radiology is a study of the passage of opaque substance through the tract and is valuable to the extent that it approaches that organ's everyday behavior, and the thoroughness with which this is done.

EARL R. HOSKINS.

DOCTOR AND PATIENT

It often takes a layman to tell a professional man what he is and whither he is tending. A physician is a human being and tends to get so bound up and blinded to everything but his one idea. This is apt to be true of specialists.

Dr. Burns, in her recent trip to the colleges, emphasized the point that our students in school were not concerned about the specialties, and that while a few of them probably would become specialists they were leaving that matter to take care of itself for the present.

Specialization is the easier way. The specialist does not have to think so broadly nor so deeply. He confines his therapeutic counsel and action very largely to the condition on which he centers his efforts, turning the responsibility over to the next specialist in line or, happily, if there be one, the family physician. Too often the poor patient languishes and falls between the specialists, losing heart. What he needs and must have is the doctor who takes the position of family physician, the man who knows and studies and stays by him to the end, directing and carrying the responsibility for the patient, managing and giving to him the sum total of what the needed specialists may have to contribute in the interest of the patient.

We would not despise the specialist. We need him and we want him to be the very ablest of his kind, especially if he belongs to our own school. But to be a family physician is the unique form of service than can be most ably given by the man who has the training and knowledge that he has secured in an osteopathic college.

It's the patient who is sick; it's his body that needs attention; it's the heart of the man that needs support and courage.

But let the layman editor speak to us and to him we may well listen. For instance, the *Chicago Tribune* of April 2 contained this editorial:

DOCTOR AND PATIENT

And now comes Dr. Wendell Phillips of New York, president of the American Medical Association, with kind words for the family physician. They are a part of the reaction against certain inevitable tendencies in the science and practice of medicine which in recent years has appeared faintly, it is true, yet with a certain increasing insistence.

It is difficult to describe this reaction without opening the way to wrong inferences. It is not a reaction against specialization, because specialization is necessary in an advanced stage of every general science, and in the case of medicine it has added enormously to the fund of accurate knowledge and in important respects has improved medical technic. Research and specialization are necessary to progress and they have come to stay. But many thoughtful men have observed that the high honors and rewards which have been going to the research man and the specialist have been drawing attention from other aspects of the art and practice of medicine, with a consequent loss not only to the public but also to medicine itself. Therapeutics, that part of science which concerns itself with the cure of disease, has been in danger of becoming Cinderella, sitting at home by the ashes without much prospect of attention from the fairy prince, Success. A distinguished surgeon, lately the victim of a therapeutic error at the hands of a distinguished colleague, was heard to remark with some feeling: "These doctors! They probe around to find what you've got and give a long name to it and then they are done with you." Virtually the same comment on his profession was made a few years ago by another leading doctor, who against the appeal of his friends insisted upon taking the chair of thereapeutics in a famous institution. It's about time, he said, that we realize that relieving the sick is our job.

As for specialization, necessary as it is, it is not all of medicine. The knowledge of the specialist is as limited as it is profound in its own field, and therefore it is capable of serious errors. Coordination is essential. It tends necessarily to deal with the patient in piecemeal and the patient happens to be an entity, a human being, not a case, a subtly interacting creature who, to be treated with real science—that is, with real knowledge—must be studied and treated as a whole being.

Of course, there are disorders which can be most effectively examined, diagnosed, and treated by the specialist, for the specialist by concentration has acquired not only a greater knowledge of its phenomena but often even a special sense for its diagnosis and cure. We are not underestimating the value of specialization, but the general physician and, we think especially, the family doctor remains, as Dr. Phillips is reported to assert, the foundation of the medical profession. It is he who knows the case as a human being, as a complex interacting entity, and is able to discern and interpret reactions which the specialist may overlook or misinterpret, and which may be of decisive importance. It is the family doctor who comes to know the history of the patient broadly, including such relevant factors as mental and moral habit and temperament, to say nothing of environmental facts which may have a significant bearing upon the patient's trouble. It is also the family doctor upon whom the pressure for relief is most insistent. The office specialist sees a case come in and go out. The family doctor does not get off so easily. He is a family doctor and has the family at his elbow. He can't give his patient's disorder a long name and walk away. He stays to answer the human appeal: What are you going to do about it?

The point Dr. Phillips and others would make, it seems, is that therapeutics in its broadest sense needs to be underlined in medical education at this time, and that the service of the medical profession must not too much emphasize its pure science aspect while losing interest in the practical relief of suffering. To treat a disease as the disorder of a mere mechanism, a problem in physics, chemistry, and related material sciences is, we venture to say, less scientific than it is assumed to be. The highest function of the art and science of medicine is the relief of human suffering. Research is essential to that relief. But it is, medically speaking, an aid and not an end. Specialization represents an important advance in the organization and use of knowledge, but it is an auxiliary, not the fundamental structure, of the art of medicine.

IMPORTANT

All communications for the Central office should be addressed to the American Osteopathic Association, 844 Rush Street, Chicago.

Every day a large parcel of mail addressed to our printers in Oak Park, Ill., is forwarded to this office, causing considerable delay and a great deal of trouble to the printer. Our Oak Park address must be given in our publications to comply with second-class postal regulations, but all association business is transacted at our offices in Chicago.

Your letters will receive more prompt attention and avoid the risk of being lost, if they are sent direct to this office.

APPEAL FOR RECORDS OF CLINICAL EXPERIENCE WITH PROBLEM CHILDREN

A type of case which comes now and then into every general practice is the child who is at odds with his environment. There may be mental subnormality or satisfactory mental rating with a tendency toward moral delinquency. Hundreds of osteopaths possess records of such cases which have never been reported; physicians particularly interested in the problem have tabulated carefully findings and results.

I wish to appeal to the profession for backing in the preparation of a paper on this subject (which I have promised to present in a few weeks). In view of the fact that osteopathy has been handling cases of problem children from its early days, it hardly seems too ambitious to hope for extensive data, sufficient to give value to a simple statement of the facts which we are accustomed to accept, but which, without abundant evidence, may fail to carry where osteopathy is not understood.

Where possible, it is desirable to include school or other lay records with those of the physician, all of which material I should expect to turn over to the proper bureau for preservation.

JENNIE ALICE RYIL.

SOMETHING WORTH CONSIDERING

Life membership in the leading organization of a scientific profession is highly prized. It is an evidence of honorable standing in the profession itself, and it gives the holder a good status outside the profession. In some organizations the conditions of life membership are so exacting that it becomes an object of ambition, worth effort and sacrifice.

For those who can easily afford it—and we have many such in our ranks, a life membership in the A. O. A. is well worth while. It is an expression of loyalty to the Association and of faith in the future of the profession, it saves the trouble involved in the annual payment of dues; and incidentally, a life-membership certificate on the wall of an osteopathic physician's office, makes a favorable impression on friends, patients and others who see it.

One of our divisional societies is presenting one of its officers with a life membership as a token of gratitude for long and efficient service to their organization, an example which other societies might well emulate.

Just recently one of our women members applied for a life membership, for which she is paying in monthly installments of $25. This method of payment may appeal to many who are not in a position to pay the full amount—$150, at once.

Why not be a life member?

A. O. A. AND DENVER POLYCLINIC COMBINE FOR TWO WEEKS' POSTGRADUATE COURSE

This year the annual A. O. A. postgraduate course following the convention will be combined with the 13th annual postgraduate course of the Denver Polyclinic. The union will make a profitable and interesting course.

Special courses on diagnosis, scientific food and efficiency in connection with the doctor's problems are offered. Teachers of long years of experience will be there. Such leaders as A. D. Becker, R. R. Daniels, W. Curtis Brigham, C. J. Gaddis, D. L. Clark, C. C. Reid, F. I. Furry, Fannie E. Carpenter, Emma Adamson, Harold A. Fenner and others will give work in which they have had much experience and many years of practice. Every one will have a real message for those attending the course.

Dr. R. R. Daniels, Clinical Building, Denver, Colorado, is secretary-treasurer.

WHO IS THE LAYMAN?

The striking lead article in Osteopathic Health for May, "Why I Go to the Osteopathic Physician," will make all who read it wonder as to the identity of the author. It is simply published as written by a layman. This was first issued several years ago, and is reprinted by request. We did not know who the author was, and after careful enquiries we found out, but the information arrived just after the May O. H. was off the press.

The layman who makes such a convincing plea for the osteopathic physician is Alexander Black, a well known figure in the world of literature and journalism. Mr. Black was formerly Sunday editor of the New York World, while his fertile pen has produced many books, including The Story of Chin, Photography Indoors and Out, Miss Jerry, A Capital Courtship, Miss America, Modern Daughters, Captain Kodak, The Girl and the Guardsman, Richard Gordon, Thorney, The Great Desire, The Seventh Angel, The Latest Thing, American Husbands, and others. Mr. Black brought out the first screen drama in slow motion in 1894. C. H. M.

Massachusetts Osteopathic Hospital—See next page

Department of Professional Affairs

CARL P. McCONNELL, Chairman

HOSPITALS AND SANITARIUMS

W. CURTIS BRIGHAM, Chairman
600 Edwards-Wiley Bldg.
Los Angeles

The osteopathic profession is, and always has been, interested in the Delaware Springs Sanitarium. It has functioned in a very important way.

The profession wishes the new management every success possible, for in a measure our profession will succeed or fail as the Delaware Springs Sanitarium succeeds or fails. Osteopathic institutions are always an essential part of our program.

W. CURTIS BRIGHAM.

NEW HOSPITAL FOR MASSACHUSETTS

The osteopathic profession of Massachusetts is about to see its dreams of a hospital come true. For four years the trustees of the Massachusetts Osteopathic Hospital have been planning and devising ways and means for the erection of this building.

An acre of land on Evergreen street, Boston, which is in the hospital section of the city, has been purchased as a site for the institution.

The architects, J. Williams Beal, Sons, Boston, have finished the plans of the building. Construction of the first unit will start immediately and it will be ready for occupancy in October.

The building will provide for an osteopathic outpatient department which will contain treating rooms and diagnostic facilities as well as the usual emergency room. The rooms for patients will all be equipped with telephones, radio plugs, soundproof walls and floors, and extra large windows provided with special glass which allows for admittance of ultra-violet rays. Doors and corridors will be of ample size to permit all beds to be taken out of rooms onto airing balconies.

All the newest features of modern hospital construction will be utilized in every department.

The trustees are as follows:

Dr. Frank M. Vaughan, vice president, 308 Boylston St., Boston; Dr. Perrin T. Wilson, secretary, 1626 Massachusetts Ave., Cambridge; Mr. Terry B. Gordon, treasurer, Copley Square Branch, State Street Trust Company, Boston; Dr. John A. MacDonald, 160 Newbury Street, Boston; Dr. Myron Barstow, 30 Huntington Ave., Boston; Dr. Alexander F. McWilliams, Huntington Chambers, Boston; Dr. Orel F. Martin, Hotel Braemore, 464 Commonwealth Ave., Boston.

LANCASTER, PA.

A three-day rummage sale was held March 17, 18 and 19 under the auspices of the Lancaster County Hospital Association, Mrs. A. H. Siegrist and Mrs. John Eichler being in general charge.

Department of Public Affairs

JOHN A. MacDONALD, D.O., Chairman
160 Newbury St., Boston

BUREAU OF CLINICS

VICTOR W. PURDY, Chairman
725 Caswell Bldg., Milwaukee

NORMAL SPINE WEEK

At this writing plans are going forward for National Normal Spine week. Plans made by individuals, groups and clinic centers in the large cities.

If Normal Spine week is to become a national institution the experience of one year should give us something to use for the year following. This means that all plans are of interest to this department, the business of which is to further this important factor in public affairs. Dr. Purdy has called attention to the work of Dr. Shay of Sturgis, Mich. It is hard to think of a better individual effort than Dr. Shay's.

Of the larger groups so far known, the Massachusetts State Society expects their plan to accomplish more this year than any previous effort in this vicinity. Part of the material used by the Massachusetts State Society is in the hands of Dr. Purdy; and when the work is completed samples of the letters, cards, charts, etc., will be shown in proper order. The educational committee of the Massachusetts Society deserves great credit for the thorough preparation and earnest effort. Dr. Marjorie Johnson of Boston heads this committee and is responsible for the excellent character of the preparation. Dr. Wallace Muir, also of Boston, on her committee, has handled the publicity, reaching the schools, societies, churches and communities. His work has been of a rare kind and promises the best effect.

We of Massachusetts feel that whether this year is a success or not we are building something that will be invaluable in the future.

It is more than likely that the state societies as organizations can do the most effective work in this direction. The A. O. A. is the sponsor of National Normal Spine week. Conforming to recent policy the state societies are working as units of the A. O. A. (always keeping in mind the ancient principle of "state's rights").

It seems then that the states should organize to put this Normal Spine week over every year—always looking for the best plan of operation. If anything will help clinics in the long run, this idea will. Nothing can take the place of such individual effort as Dr. Shay of Sturgis has shown, but next to that comes efficient work of state organizations on the best plan developed by experience.

Send in your plans to Dr. Purdy of the Bureau of Clinics. Help him to get the valuable data which he is accumulating for the future.

JOHN A. MACDONALD, *Chairman.*

From the many reports that have been made, there has been an active interest taken in Normal Spine Week. Another year the chairman of this bureau will have a groundwork upon which to build and will be prepared well in advance to give aid and advice.

The Massachusetts Osteopathic Society has done most creditable work through its educational committee in putting into effect a program second to none. A letter addressed to their members stated that the A. O. A. every year selects a week during which extra attention is devoted to bringing before communities the importance of the spine. The purpose of the spinal examination is to find the earlier defects that produce faulty posture—early deviation of the spine, flat chest, etc. There is a follow-up clinic for the children who need aid in maintaining normal posture, where adjustive treatment is given and corrective exercises are taught. The clinic hours for this Big Clinic Week were every afternoon from 4 to 5 and evenings 7 to 8. A popular health talk was given each evening. This timely request was made, "If you are too far away to attend this clinic, will you not start either a group or one-man clinic in your own city or town? Make this a big osteopathic week." If every osteopathic group center would tie into the work as our friends in the Hub did the spirit of the thing would grow and grow.

Dr. Ward C. Bryant, Greenfield, Mass., assisted by Dr. Anne M. Fielding, has for the past five years conducted a children's free clinic Wednesday and Saturday mornings, between eight and nine, and at the present time they have an average of forty children twice a week. During Normal Spine Week they set aside one hour every morning to examine and treat children. A record of each child is kept. The Parent-Teacher Association handles the publicity and sends three helpers each day, one attending to the children as they come, the other two taking charge of the cards at the desk. The doctors feel that their greatest achievement has been the education of parents to the fact that much can be accomplished with the very young children, the greatest number of cases being nutritional disorders and tendency to colds.

Dr. R. H. Singleton, Cleveland, Ohio, announces the organization of the Women's Osteopathic Club, composed of about one hundred lay women, including the wives of osteopaths. One of the chief aims of this club is to raise money to establish an osteopathic clinic, an ideal way to start such a movement. These women are interesting two churches, where they expect free clinics will be started before long. It is this Women's Osteopathic Club that is taking all responsibility for maintaining the clinic and they are going into the matter with enthusiasm. The osteopathic physicians will have to do only the actual treating of the patients. This scheme has worked well in other

cities, and I think it might be followed out advantageously throughout the country.

VICTOR W. PURDY.

A goodly array of newspaper clippings has arrived at the Central office, many announcing by news items and some by special advertisements that Normal Spine Week was signalized by extra activity in community service by the profession in many states. Already we have received news from Arizona, California, Delaware, Indiana, Iowa, Massachusetts, Missouri, Montana, Nebraska, Pennsylvania, Texas and Washington.

At some lone outposts of osteopathy, where the profession has only one representative, he or she conducted a clinic and impressed the value of osteopathy therapy on the public. In practically all centers attention was concentrated on the examination of school children.

The East Bay Osteopathic Clinic, Oakland, Calif., had a program covering a wide range, devoting each day to some special class of cases. Lectures were also given daily, the subjects and speakers being as follows: Diet for the Expectant and Nursing Mother, Dr. Edgar S. Comstock; Spinal Posture, Exercise and Spinal Correction, Dr. Paul K. Theobold; Function of Spine and Skeleton in Pregnancy, Care of Expectant Mother and Child, Dr. Katherine L. Whitten; Spinal Posture, Correction and Strengthening, Dr. George M. Peckham; The Feet, the Foundation of the Spine, also Foot Correction and Footwear, Dr. James H. Bell; Spinal and Other Causes of Colds; Nose, Throat, Eye and Ear Complaints, Dr. Clara Morris; Spinal and Other Causes of Heart and Lung Conditions, General Care and Habits of the Child, Dr. Lily G. Harris.

The Massachusetts Osteopathic Society, in addition to the activities mentioned above by Dr. Purdy, had special speakers every evening from Monday to Friday, the topics being: The High Speed Business Man, Middle Age, The College Girl, The School Child, and The Adolescent Boy.

The osteopathic physicians of Cerro Gordo County, Iowa, will hold a special Normal Spine Day at Mason City on April 5, when Dr. Gaddis will conduct a school children's clinic and speak two or three times.

CLINIC OPENS IN OLD LONDON

On Friday, February 11, the Osteopathic Association Clinic, under the direction of the British Osteopathic Association, was opened in real metropolitan style, with a formal meeting in the afternoon and a banquet at night.

The afternoon proceedings took place at the Clinic, 86 Vincent Square, Dr. Kelman Macdonald, vice president of the B.O.A., in the chair. Speeches were made by the Rt. Hon. Noel Buxton, Sir Harry Foster, M.P., and George Bernard Shaw. The speech of "G.B.S." was the big event of the program, and it will be published later in one of the A.O.A. periodicals.

The banquet, held at the Cafe Royal, was attended by many prominent personages, including ten members of parliament. Dr. E. T. Pheils, of Birmingham, president of the B.O.A., occupied the chair. The osteopathic speakers on the toast list were: Dr. Pheils, Dr. George Macdonald and Dr. Kelman Macdonald, while six of the parliamentarians said good things about osteopathy—Cyril Atkinson, Sir Harry Brittain, Sir Harry Foster, Arthur Greenwood, P. J. Hannon and A. Mackenzie Livingstone. The health of the chairman was proposed by Mr. Fred Moir Bussy.

EAST BAY CLINIC HAS GOOD YEAR

Nearly seven thousand treatments were given during 1926 at the East Bay Osteopathic Clinic, Oakland, Calif., reports the *Western Osteopath*. The figures in the annual report are as follows:

	Treatments	New Patients	Receipts
Day Clinic	5,608	382	$4,767.82
Evening Clinic	1,059	76	751.20
Dr. Bell's Clinic	197	10	49.44
Children's Clinic	92	76	10.25
	6,956	544	$5,578.71

On January 1 the clinic had a balance to the good of $430.22, after deducting all expenditures of the year.

THE ROSCOE OSTEOPATHIC CLINIC

CLEVELAND, OHIO

Advantageous arrangement, privacy and unlimited outside light and ventilation is afforded in the offices of the Roscoe Osteopathic Clinic by the occupancy of the entire seventh floor of the Smythe Building, 1001 Huron Road, Cleveland, Ohio. The Smythe Building is located in the heart of the business district on a quiet thoroughfare between two of the main streets of the city and just one block from Euclid Avenue and East Ninth street, said to be the second busiest traffic point in the world.

The building is new and of modern, fireproof construction throughout. The corridors of the clinic are of warm-tinted marble, the walls cream color, the wood and metal trim a rich walnut finish, the walls and floors of continuous piece construction, eliminating cracks and crevices and facilitating cleanliness.

The building was designed for the occupancy of dentists and physicians, hence is unusually well provided with electric and gas outlets, compressed air, and hot and cold running water. Each room has an extra large outside window. Each basin is supplied with floor compression cocks so that the hands never touch the faucets.

The visitor upon entering the clinic is given an immediate impression of its extent through the vista down the corridor which bisects the space.

The registrar and her assistant are stationed near the front entrance. Here also is the telephone exchange, the main station of the intercommunicating house telephones, and the "auto-call" by which any doctor or employe may be located if not at their usual station. An ingeniously adjustable mirror gives the main desk constant surveillance of the corridor for directions to patients, doctors and nurses.

At the right hand immediately after entrance is the large, cheerful waiting room softly carpeted in imperial blue and gold, with easy chairs and davenport of walnut upholstered in rose and taupe. Beautiful pictures, lamps, table scarfs, vases and screens combine with the carpeting and furniture to provide an attractive picture very different from the usual type of physician's waiting room.

Next to the waiting room is the consultation office and next to that is the examination room. All the examining and specialty practice rooms are ranged along the south side of the corridor, while the treatment rooms, hospital rooms and surgery are arranged along the north side of the corridor which is cooler in summer and quieter at all times of the year.

Except in the reception and waiting room the floor is covered throughout with the same color scheme of taupe carpeting or battleship linoleum. The dressing rooms are richly hung with silk damask with dressing table lamps and ivory or pearl fittings to match.

The treatment rooms are unusually light, airy and spacious. McManis treatment tables are used exclusively.

The surgery and hospital rooms in connection permit of tonsillectomies, adenoidectomies, hemorrhoidectomies, etc., etc., being performed in the clinic, the patient remaining as long as may be necessary under the care of a registered nurse. Patients can also be brought in and placed under observation. Cases referred from out of town find the hospital suite more convenient than the hotels. They can come directly to the clinic and remain until ready to return home.

Physiotherapy is used in conjunction with osteopathic treatments with excellent results. The equipment embraces the latest designs in diathermy, Polysine, air-cooled mercury quartz, carbon arc and thermo lamps, infra-red and Vitonet.

The clinic makes a specialty of complete physical examination and diagnosis and has excellent equipment and scientific apparatus for this work.

Five doctors comprise the professional staff:

Dr. P. E. Roscoe, General Diagnosis, Obstetrics, Pediatrics, Proctology, and General Osteopathy.

Dr. L. R. Rench, Eye, Ear, Nose and Throat.

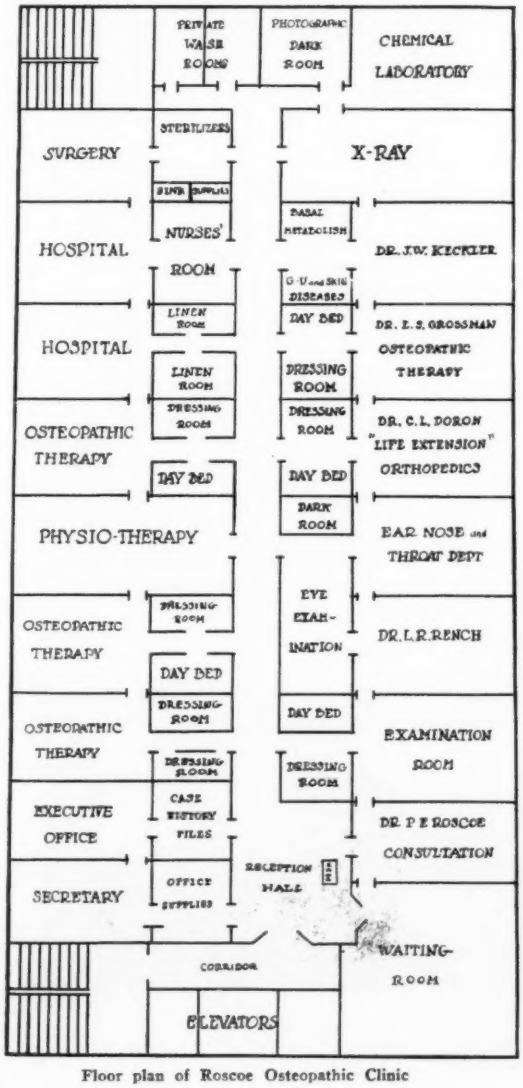
Dr. J. W. Keckler, Roentgen Ray and Chemical Diagnosis, Basal Metabolism, Skin, Genito-Urinary and Venereal Diseases.

Dr. E. S. Grossman, General Osteopathy and Anesthetics.

ROSCOE OSTEOPATHIC CLINIC

Cleveland, Ohio

Staff of the Roscoe Osteopathic Clinic. Left to right they are Drs. E. S. Grossman, J. W. Keckler, P. E. Roscoe, L. R. Rench, C. L. Doron



Floor plan of Roscoe Osteopathic Clinic

Dr. C. L. Doron, Orthopedics and General Osteopathy.

Major Surgery is performed by Dr. J. H. Long at the hospitals of the city.

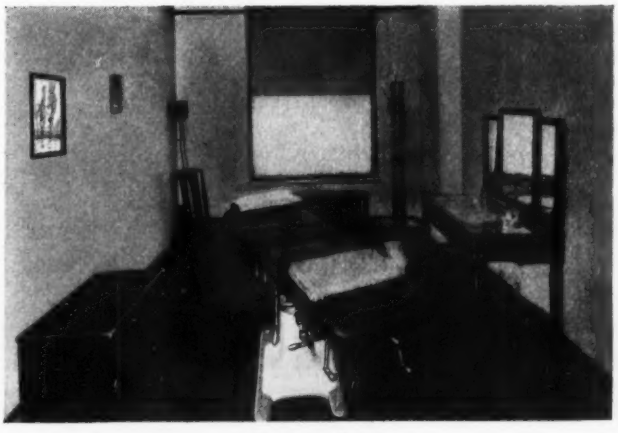
Great care has been used in working out the professional routine and business system so that there may be maximum coordination of all departments.

Fees are scheduled on a reasonable basis to permit of the greatest possible extension of service to the greatest number of people.

The Roscoe group was the pioneer osteopathic clinical formation in the State of Ohio. Drs. Roscoe, Rench and Keckler, who formed the original group, are still major units in the clinic. Organized six years ago, the clinic has moved twice for lack of physical space and is now at the capacity of the present floor area, about 4,400 square feet. Additional space may ultimately have to be taken on floors above or below.

The doctors feel that the results of the years of association have amply justified their belief in the need for a specializing group in order to render accurate diagnosis and to give specific treatment to disease.

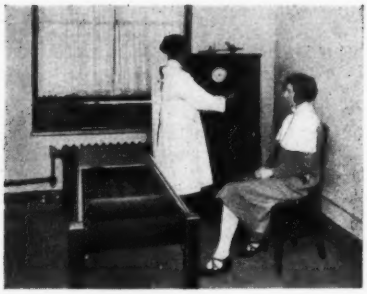
Please send us photographs or cuts and descriptions of your clinic, hospital or sanitarium for these columns.



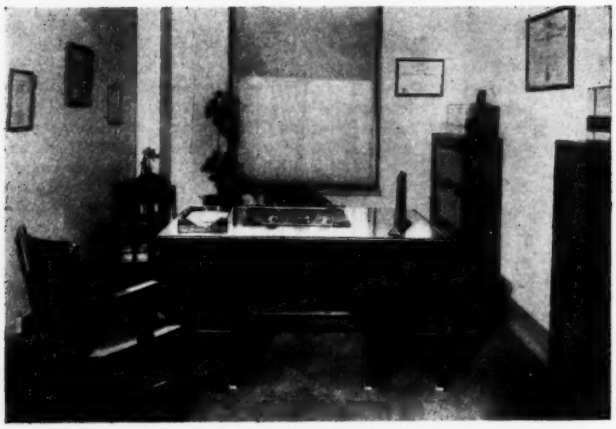
Treatment Room

The pleasant, sunny waiting room

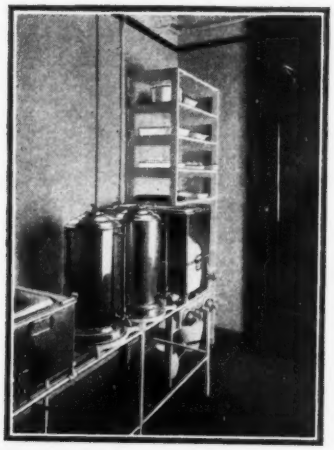
Actinic Ray



Diathermy

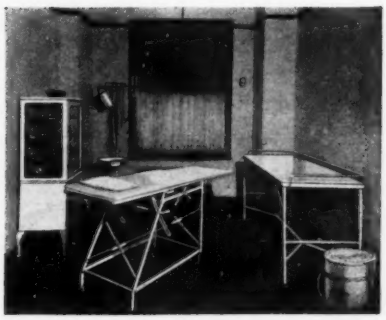


Consultation office



Steam Sterilizer and Utensil Rack

Reception Room and Corridor. Doctors' private offices and Treatment Rooms open off this corridor

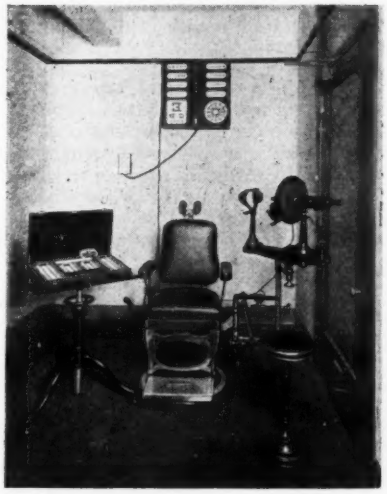


Surgery

ROSCOE OSTEOPATHIC CLINIC

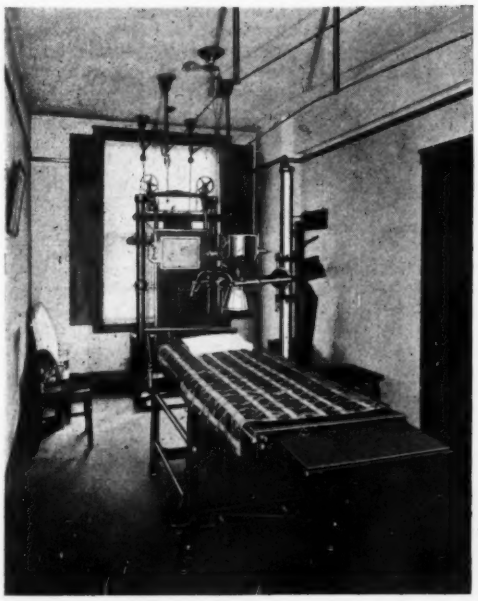
One of the Hospital Rooms

Ear, Nose and Throat Department

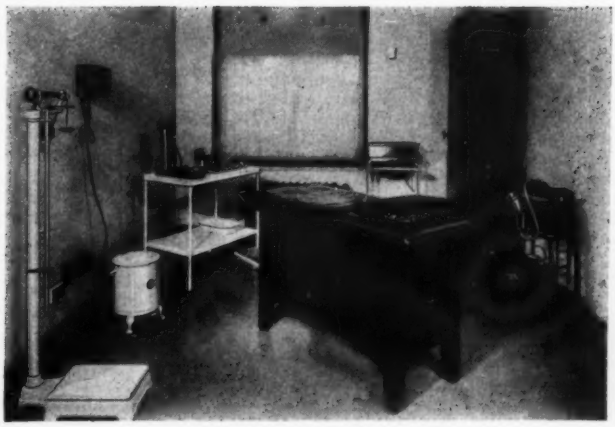


Eye Examination and Refraction

Chemical Laboratory



X-Ray Laboratory



Examination Room

ROSCOE OSTEOPATHIC CLINIC

BUREAU OF INDUSTRIAL AND INSTITUTIONAL SERVICE

W. OTHUR HILLERY, Chairman
220 Bloor St. W., Toronto, Canada

MASSACHUSETTS

Dr. M. R. Spalding of Whitinsville is coach to the Whitin Community boys' swimming team, which has not met with a single defeat this season. None of the boys has been forced to stay away from meets because of sickness.

MISSOURI

One of the Kirksville boys, C. F. Whitesell, June '28, known as "Whitie," is doing good work in connection with the Moberly (Mo.) high school athletic activities. "Whitie" has a fine record as a player, and he is making an early start for the work of osteopathic trainer and physician.

FLORIDA

Dr. G. C. Bartholomew of Palatka is closing his fourth term as team physician to the "Winsome Wildcats," three times champions of Florida girls' high school basketball. This is the team pictured and described in the November '26, O. M.

NATIONAL AFFAIRS

C. B. ATZEN, Chairman

Long Beach (California) Community Hospital

Court action or the referendum may be resorted to to make the Long Beach Community hospital an open institution, according to Dr. Warren B. Davis, who proposed in January that a plebiscite be held on the question (Jour. A .O. A., Feb., 1927, p. 509).

The site of the hospital is owned by the city, the building and equipment being owned jointly by it and the Community Hospital Association. When it was completed in 1924, it was leased to the Community Hospital Association for three years. When the question of renewing the lease came up, the local osteopathic profession made a determined fight to prevent the renewal unless the institution were opened to them.

In the course of the controversy, the mayor, who is president of the Community Hospital Association, and who is said to have contributed more than $100,000 personally to the enterprise, issued a long statement in which he said:

"We found that 95 per cent of the hospitals of the nation, including all the most important and successful were in charge of the 'regulars.' We found that osteopaths and chiropractors have few hospital cases. There are in hospitals in Los Angeles in charge of 'regulars' about 2,500 patients, and in osteopathic institutions probably about 100. At Long Beach in the three hospitals under 'regular' charge an average of about 250 patients, and in the pleasant, well located osteopathic hospital an average of perhaps 3."

The osteopathic profession answered with a statement saying that osteopathic and "regular" physicians worked in harmony in the larger hospitals of the country for years until the "regulars" of the American Medical Association adopted, as one of the rules of hospital standardization, the edict that they would not patronize those hospitals that admitted physicians not eligible to membership in the A. M. A. The statement continues:

"Until that rule, we osteopathic physicians of Long Beach were permitted to take our patients to both Seaside and St. Mary's, and there was no lack of harmony, and we were treated with every consideration. That rule of the A. M. A. is the only reason why Mr. Condit found 95 per cent of the hospitals in the hands of the 'regulars,' and he was fully aware of the fact.

There are two osteopathic hospitals in Los Angeles, one of 50 beds and one of 120 beds, and they are both filled to capacity most of the time. One of them is planning an addition. So much for Mr. Condit's 'probable 100.' He speaks of a 'pleasant, well located osteopathic hospital with an average of perhaps 3 patients in Long Beach. There is no osteopathic hospital of any description in Long Beach and there never was."

DELAWARE

Bill Introduced.—House bill 413 would define osteopathy and would regulate the practice of osteopathic physicians and surgeons.—*Jour. Am. Med. Assn.*

ARIZONA

SENATE COMMITTEE UNFAVORABLE TO BASIC SCIENCE BILL

The public health committee of the state senate reported unfavorably on the basic science bill which had been reintroduced after being indefinitely postponed. The bill was introduced under the auspices of the medical profession of the state.—*Jour. Am. Med. Assn.*

ILLINOIS LEGISLATION

The profession in Illinois has carried on an intensive and strenuous campaign attempting to educate and organize to the point of securing an osteopathic examining board. At latest accounts, the house committee on efficiency and economy had returned adverse recommendations as to the two bills, one by a vote of 8 to 7 and the other 7 to 6. It was expected that a fight would be made on the floor of the house to overturn the committee's recommendation.

IOWA AMENDMENT

The profession in Iowa is asking for an amendment to the osteopathic law, to allow those who have completed two years study in an approved osteopathic college and who practice under the supervision of a licensed osteopathic physician to render gratuitous service in case of emergency. It would also authorize the holder of an osteopathic license "to practice osteopathy in all its branches as taught and presented in colleges of osteopathy legally approved by the Iowa osteopathic examiners, including the use of anesthetics, antiseptics, germicides, parasiticides, narcotics, antidotes, biologicals (such as endocrine therapeutic preparations, vaccines and serums), and such drugs as are commonly accepted to be of service in saving life in vital emergencies."

VACCINATION AND SERUM ADMINISTRATION IN MINNESOTA

Dr. Arthur Taylor, chairman of the Minnesota legislative committee, reports that the attorney-general's office in Minnesota has issued the following opinion:

"There is a provision in chapter 343 of the laws of 1923 to the effect that 'osteopathic physicians when duly licensed shall have the right to practice osteopathy as taught in reputable colleges of osteopathy, including the use and administration in connection with the practice of obstetrics, minor surgery and toxicology, only, of anesthetics, narcotics, antidotes and antiseptics.' As we construe this provision an osteopath may vaccinate for smallpox. A graduate trained nurse may not do so for hire without violating the medical statute. Licensed physicians and osteopaths alone have the right to vaccinate for smallpox for a fee. Osteopaths may administer anti-typhoid and anti-diphtheria and other preventive serum treatment."

NO NEW YORK LEGISLATIVE CHIRO REPORT

It is reported that the commission appointed by the New York legislature to investigate chiropractic (Jour. A. O. A., Sept., 1926, p. 47), reported without recommendation on March 16, saying that the commission did not organize until December 24, and had but three hearings in January, so that there was insufficient time to investigate thoroughly.

AMENDMENT VETOED BY NEW YORK GOVERNOR

The New York bill passed the assembly by a vote of 140 to 3, and the senate by 43 to 7. The bill provided:

"Except as hereinafter provided, a license to practice osteopathy shall not permit the holder thereof to administer drugs or perform major surgery with the use of instruments. Notwithstanding the foregoing provision, a person licensed to practice osteopathy may use in the treatment of patients the following therapeutic agencies: narcotics, for the relief of suffering, by administration but not prescription, anesthetics, antiseptics, vaccines and antitoxins."

REPEATED SETBACKS IN OHIO

The Ohio bill providing for a separate board of osteopathic examiners came before the house committee on March 9 and was indefinitely postponed by a vote of 8 to 7. An effort was made in the house on March 14 to reconsider the committee's vote, and this was defeated 46 to 56.

RHODE ISLAND BILL

A bill has been introduced in the Rhode Island Legislature providing for a board of examiners in osteopathy to be appointed by the State Board of Health, at least one of its three members to be an osteopathic physician. It provides that those licensed may practice osteopathy in all its branches, as taught and practiced in recognized colleges of osteopathy, and shall have the same rights, duties and liabilities as any other physicians, except the writing of prescriptions for drugs for internal medication and the practice of major surgery. It provides further that the holder of a certificate to practice osteopathy upon completion of one year's postgraduate interneship in a hospital approved by the board shall be licensed to practice surgery in all its branches.

BILL VETOED IN SOUTH DAKOTA

The governor of South Dakota vetoed a bill to establish a composite state board of health whose membership was to include an osteopathic and a homeopathic physician and a dentist. The bill provided for the practice of major surgery by osteopathic physicians.

WASHINGTON

Governor Signs Basic Science Bill. — Governor Hartley signed the basic science bill, March 1; the law becomes effective June 10. There were only two votes in the senate and twenty-seven in the house against the bill. The new law establishes a committee of five members from the faculty lists of the University of Washington and Washington State College to conduct examinations of all persons applying for licenses to practice medicine, osteopathy, chiropractic and drugless therapeutics. The committee shall conduct written examinations in anatomy, physiology, chemistry, pathology and hygiene. Applicants shall present to the director of licenses evidence of their qualifications to take the examination, and if considered satisfactory they shall be entitled to be examined in the basic sciences after paying a fee of $10. After the applicant has passed the examination with an average of not less than 75 per cent, the committee shall issue a certificate which the applicant shall file with the state treasurer, together with his application for a license in his particular branch of healing. The law shall not be construed in any way to interfere with the practice of religion, or to regulate any kind of treatment by prayer.—*Jour. Am. Med. Assn.*

LEGISLATION FAILS IN SASKATCHEWAN

Dr. Anna E. Northup, Moose Jaw, is the only member of the American Osteopathic Association among the two or three osteopathic physicians in Saskatchewan. Backed up by members of the profession from other provinces she made a determined fight for a bill to amend the medical profession act to include osteopathic physicians under its provision instead of under those of the drugless practitioners act. It provided for the examination of applicants by the University of Saskatchewan in the same subjects as drug physicians, except that instead of materia medica they should pass an examination in the principles of osteopathy given by an osteopathic examiner, and that their practice should be restricted to "osteopathy." The newspapers gave a great deal of space and evidently very fair consideration to the hearings and discussions, but the committee reported against the bill.

FAILS TO RECOVER FEES IN ENGLAND

The London Times of February 25 reported that on February 24 Deputy Judge Stoker in Bloomsbury County Court decided that an osteopathic practitioner (whose name was not found in the records of the American Osteopathic Association) could not recover fees for professional services. The judge referred to the medical act of 1858, and is quoted as saying:

"You are not registered under the medical act which states that you must have special qualifications in order to entitle you to recover fees . . . The law says that you cannot recover fees for medical or surgical treatment."

This was not in accord with a decision reported in High Court of Justice King's Bench division, upholding the *London Times* of October 26, 1921, rendered in the a lower court's ruling in favor of Dr. Marion Hall who sued to collect for osteopathic treatment. In that case the defendant cited the medical act of 1858, but the county court judge held that osteopathic treatment was not within the act, which provides:

"No person shall be entitled to recover any charge in any court of law for any medical or surgical advice or attendance, or for the performance of any operation or for any medicine which he shall both have prescribed and supplied unless registered."

It was held that osteopathic treatment did not come within any of these specifications, and the judge made it clear that "He was far from saying that anyone who chose to call himself an osteopath could charge for any service which he chose to render."

RECOGNITION BY COLORADO INDUSTRIAL COMMISSION

Dr. C. Robert Starks, Denver, reports that he treated an industrial accident case and the employer wrote to the injured workman:

"That reports of your accident made by Dr. Starks are not acceptable to either the Industrial Commission of the State of Colorado or the officers of the employees' benefit plan; both require that treatment be rendered by a medical doctor. This, of course, means nothing more than that the company will not be responsible for any bill rendered by Dr. Starks . . . This . . . will also limit payment for regular compensation as prescribed by the Industrial Commission of the State of Colorado."

Dr. Starks sent a lawyer to the Industrial Commission and the referee told him that the bill must be paid and that the company was subject to a penalty of $100 for every day they refused. The bill was paid.

BUREAU OF PUBLICITY AND STATISTICS

RAY G. HULBURT, Chairman

TELLING MUSICIANS ABOUT IT

Dr. O. C. Foreman calls attention to the March Supplement of Welte-Mignon (licensee) reproducing records, containing the following paragraph:

"Musicians when giving their services often do so with little idea of just what sort of work they are benefiting. It was a different situation recently, however, when Josef Hofmann played at a Sunday afternoon concert at the Metropolitan Opera House for the benefit of the New York Osteopathic Clinic. Mr. Hofmann suffered a rather serious illness not so many years ago and osteopathy was brought to his relief. It was to repay that part of a debt that does not come under the head of dollars and cents that Mr. Hofmann played for the clinic's building fund."

This bulletin is said to have a circulation of 50,000 copies or more.

IN UNITED STATES EDUCATIONAL DIRECTORY

The 1927 Educational Directory, issued by the United States Bureau of Education, lists schools of osteopathy on page 76 just as it lists schools of medicine, of dentistry, of pharmacy, of veterinary medicine, etc. Eight colleges are listed with the name of the president or the dean in each case.

THE DENVER CONVENTION

Dr. C. W. Starr, Billings, Mont., was first to call attention to a paragraph which has been published widely over the country:

"Dame Nature is suffering from chills up and down her continental spine at the thought of osteopaths getting back to nature in the Colorado Rockies in July, coincident with the convention of the American Osteopathic Association in Denver. Let's hope they confine their adjustments to the crack of dawn!"

The convention is being rather widely mentioned in other ways.

MEDICS AND BRITISH OSTEOPATHIC CLINIC

An interesting exchange of views has been going on in *The Medical Press*, a British magazine, concerning

osteopathy and applied especially to the British Osteopathic Clinic. An editorial comment on February 15 says:

"We must have lost our sense of proportion. The manipulations used by the priests in ancient Egypt are claimed by the osteopaths to be similar to those which they employ today; and the alleged reduction of a dislocated neck by the Quaker, George Fox, in the 17th century, is accredited to the exercise of the same principles revealed to the world by the prophet of osteopathy just fifty-three years ago.

"Manipulative surgery is no new art; it was practiced by Hippocrates."

A writer in the correspondence column of the same number referring to George Bernard Shaw's address at the opening of the clinic said: "Advocacy of this kind will certainly not redound to the advantage of the relations between osteopathy and medicine."

A correspondent in the February 23 number who had visited the clinic said among other things: "The first case I saw was that of a man, about 50 years of age, and a clerk by occupation. He was suffering from emphysema and chronic bronchitis. By means of percussion and auscultation, combined with a knowledge of the previous history of the patient, an ordinary medical practitioner would recognize the condition and apply suitable treatment. The administration of drugs would almost certainly form a part of such treatment. The osteopath, as such, diagnoses the general condition in much the same way as the physician, but he carries the process of physical examination a stage further. He makes a careful examination of the spinal column from the cervical to the lumbar region to see if there is tenderness, irregularity or undue rigidity in any situation. In the case under consideration there was hyperemia, tenderness, and some rigidity in the upper dorsal area. The association is significant. By certain dexterous movements on the part of the operator the rigidity in this area was overcome, the reduction being accompanied by an audible click. This operation caused no pain. No medicines were prescribed. The patient was told to return in a few days for further treatment.

"Osteopathy is growing in public esteem. The number of patients attending at the clinic is rapidly increasing. The medical profession will do well to examine the system with an open and unprejudiced mind. The system may not do all that is claimed for it by intemperate enthusiasts, but it does more than some of us have been willing hitherto to admit."

Another doctor writing in the March 2 number expressed strong appreciation of this letter and in turn got a good "calling down" a week or so later.

Commenting on the favorable remarks just quoted, Dr. Ray B. Gilmour says: "It is an apt example of the possibility of a properly equipped and conducted clinic in influencing the minds even of prejudiced observers."

EDUCATING THE SERVICE CLUBS

Dr. F. Hoyt Taylor, director of publicity for the Lansing, Michigan, Osteopathic Society says: "The Lansing physicians have made arrangements to receive an osteopathic speaker before each of the following clubs at least once a year: Exchange, Kiwanis, Rotary and others. Where will we get the speakers? We want them even though we will have to pay for them."

THE LAUNDRY COOPERATES

The publishers of *Laundry Age* report that one laundry in Texas has reprinted in circular form 100,000 copies of Dr. Van Osdol's article, "No Woman Should Wash," recently published in that journal. (*Jour. A. O. A.* March, 1927, page 598.)

Convention Notes

REPORT OF CHAIRMAN OF PROGRAM COMMITTEE

A. O. A. CONVENTION
Hotel Cosmopolitan
DENVER, COLORADO
July 24-30

July 24—Health Sunday and Conferences.
July 25—Fundamental Day.
July 26—Research Day.
July 27—Technic Day.
July 28—Symposiums on Different Parts of the Body.
July 29—Symposiums on Diseases.
July 30—Symposiums on Diseases and Installation of Officers.

Monday, Tuesday, Wednesday and Friday afternoons—Sectional Programs and Diagnoses. Monday evening—Grand reception. Tuesday evening—Pageant in honor of Dr. A. T. Still. Wednesday evening—Reunions. Thursday afternoon—Mountain picnic. Thursday evening—Returning from the mountains. Friday evening—Our Pioneers.

Last month we emphasized some features of the A. O. A. program. Everyone should note carefully how the program is built. It is fitted together so that each day hangs on preceding days.

Everyone should plan to be in Denver and registered by Sunday evening. The program will begin early Monday morning, fundamental day. It has been suggested by numbers of prominent osteopathic physicians that we should lay the foundation of our science thoroughly in our minds again and then build on it and show conclusively that our system of therapeutics is based on scientific and irrefutable facts.

After we have laid the foundation then we put on our research day, by those who have worked out definite proofs of all of our principles by actual research on animal and human. On technic day we will begin to find and correct lesions and work out the best methods of handling the pathology from a mechanical standpoint. On Thursday there will be symposiums on different parts of the body. The eye, ear, nose and throat from the standpoint of the general practitioner will be covered; also the pelvic region and the chest. Drs. Percy H. Woodall and Arthur D. Becker will cover these regions in a very practical way. Friday there will be a full program on various diseases and the osteopathic problems connected with each.

Saturday morning will see some of the best work of the convention in the program. Such men as Drs. A. G. Hildreth, G. M. Laughlin, E. B. Jones and others are listed as speakers. Dr. A. G. Hildreth was perhaps closer to Dr. Still in the early days than any man in the profession. Dr. E. B. Jones, one of the Los Angeles clinical group, will give practical points on urology.

Diagnosis and Treatment

It is our desire in planning the program to give everyone who attends the convention intensified practical work which will repay them well for attending. Besides the regular didactic program there will be arranged, for the accommodation of doctors who attend, a service department. This will be made up of six groups of doctors, three groups on diagnosis and three on treatment.

Diagnosis

I.—F. P. Walker and corps of associates in Hall 331.

II.—W. Curtis Brigham with the following associates: E. B. Jones, H. B. Brigham, E. S. Merrill, E. Bashor, W. V. Goodfellow, each one having his special line of work.

III.—Dr. George M. Laughlin with his corps of associates. Drs. Conley and Walker will have a very compe-

Yellow Fleet—Yellowstone Park Transportation Co.

tent corps of associates with them to do expert diagnoses. Those who register for diagnosis in advance may have the privilege of choosing the corps of doctors by whom they want to be examined.

These diagnosticians will work every afternoon from 2:00 to 5:00.

Treatment

There will also be three groups of doctors giving treatment. This will make it possible for all doctors coming to the convention to have expert treatment without missing the rest of the convention and without going around to hunt up somebody to give them treatment.

From 7:00 to 9:00 a. m. and 7:00 to 10:00 p. m. there will be expert technicians on duty to give treatment free of charge to all who come. Many doctors attend the convention who need expert diagnosis and treatment, and yet in the midst of hundreds of good doctors they are not able to get a careful diagnosis or have a real expert treatment because everybody is too busy. This program will make it possible for everybody to be accommodated along this line, both in diagnosis and treatment, outside of the program hours of the convention.

Doctors will be taken in order of registration through these diagnostic groups. Kindly send registrations to Dr. F. F. Woodruff, Empire Building, Denver, Chairman of Clinics. Please answer the following questionnaire in writing for registration:

What is the nature of your trouble?
Gastro-intestinal?
Pulmonary?
Heart?
Nervous and mental?
Genito-urinary?
Any other?

COMMITTEE REPORTS

Our Denver friends are up and doing, preparing for the great week of July 25. These committee reports came in just as we were going to press.

REUNION NIGHT

Any organization desiring arrangements to be made for Reunion Night, Wednesday of convention week, will kindly correspond with Dr. Esther B. Starks, 1459 Ogden St., Denver.

HOST COMMITTEE

The chairman of the Host Committee, with the cooperation of chairmen of committees on train reception, halls and furnishings and housing, is making arrangements for the reception, accommodation and housing of the guests who are expected to attend the convention of 1927.

JENETTE H. BOLLES.

ENTERTAINMENT COMMITTEE

The entertainment committee at Denver is aware of the great privilege as well as responsibility conferred on us, in making us the hosts to hundreds and thousands of the profession who have been entertained so royally and hospitably elsewhere. It is difficult to go "one better."

We will try to come up to all your hopes. Though we are not going to tell you of all the surprises in store we wish to say this: if you want a clear-cut memory of western thrills and mountain joys you may have it in one afternoon of the convention, and that is only part of what we have planned. That section to be seen in connection with Thursday's entertainment program will be an outstanding experience.

C. L. DRAPER.

PUBLICITY COMMITTEE

An Invitation to Every Doctor to Come Out and Enjoy True Western Hospitality

It is the endeavor of the publicity committee to keep the convention before every practitioner, to come and brush up on any pet subject and spend a vacation in the cool mountain breezes.

Booster stickers have been sent to the secretaries of each state association, which they are using on all outgoing mail; this serves the purpose of keeping the date in the minds of the doctors.

Cuts and inserts about Denver have been sent to the different journals, acquainting you with some of our beauty spots. Come, and we will assure you of a true western welcome. There will be many surprises awaiting you.

R. M. JONES

PARKING COMMITTEE

The traffic division manager of the Safety office assures me the visitors to Denver in connection with the American Osteopathic Association Convention will be shown every courtesy while in the city.

Overland Park, out three or four miles from the convention, is well adapted for camping. Garage space may be had near convention headquarters.

Parking any place in city is regulated according to traffic laws in effect, though the doctors and their families will be given all freedom possible.

JOHN F. BUMPUS.

DECORATIONS COMMITTEE

As you enter Denver through the Union station and pass under the arch of welcome, our endeavor will be to give each and every one of you a true Western welcome. Not only the osteopathic physicians and their families, but the entire city of Denver greets you and wishes you to enjoy our scenic beauties.

The streets and buildings will be decorated in honor of your coming.

E. J. WILLBANKS

A special Pageant Committee is being selected.

HOUSING COMMITTEE

We append a list of the principal hotels in Denver with their rates and capacities. They are listed in their order of importance and convenience to the convention center.

Denver is an essentially tourist center as well as a convention center, so the hotels will reserve only a limited amount of space for any convention. Up to date there are only sixty-seven conventions booked for Denver this season and our convention is not the largest or most important by any means in the eyes of the hotels. So the only way to be sure of having a place to stay during the A. O. A. convention is to make your reservations early and send check to cover same.

This is of the utmost importance at this time and should be given prompt attention. Requests for reservations and checks should be sent direct to me as local chairman of the housing committee, and I will make the best reservations possible and notify the doctors of the hotel and room number obtained.

HARRY V. BIGELOW.

THE TEN LEADING HOTELS IN DENVER ARE:

COSMOPOLITAN. 18th and Broadway. Cap. 900. (E) Day, single, with bath, $3.50 up; double, $6 up. (E) Day, single, without bath, $2 up; double, $3.50 up. C. S. Pryor, Mgr.

BROWN PALACE. 17th and Tremont. Cap. 600. (E) Day, single, with bath, $5; double, $8. (E) Day, single, without bath, $3 to $5. Frank H. Hoart, Mgr.

SHIRLEY-SAVOR. 17th and Broadway. Cap. 600. (E) Day, single, with bath, $3; double, $5. (E) Day, single, without bath, $2.50; double, $4. J. Edgar Smith, Mgr.

KENMARK. 17th and Welton Sts. Cap. 250. (E) Day, single, with bath, $2; double, $4. (E) Day, single, without bath, $1.50; double, $3. E. C. Bennett, Mgr.

ALBANY. 17th and Stout Sts. Cap. 600. (E) Day, single, with bath, $3, $4, $5 and $6; double, $5, $6, $7, $8 and $9. (E) Day, single, without bath, $2.50 to $3; double, $4, $4.50 and $5. Frank R. Dutton, Mgr.

ADAMS. 18th and Welton Sts. Cap. 200. (E) Day, single, with bath, $2.50 up. (E) Day, single, without bath, $2 up. J. G. Nicholas, Mgr.

AUDITORIUM. 14th and Stout Sts. Cap. 300. (E) Day, single, with bath, $2 to $3.50. (E) Day, single, without bath, $1.50 to $2. William L. Beattie, Mgr.

OXFORD. 17th and Wazee Sts. Cap. 500. (E) Day, single, with bath, $2.50; double, $4. (E) Day, single, without bath, $1.50; double, $3. J. L. Brooks, Mgr.

STANDISH. 1530 California St. Cap. 250. (E) Day, single, with bath, $2.50; double, $3.50. (E) Day, single, without bath, $1.50; double, $2.50. S. C. Hoover, Mgr.

LANCASTER. 1765 Sherman St. Cap. 150. (A) Day, single, with bath, $4; double, $6.50; week, single, $25; double, $37.50; month, single, $90 to $100; double, $140 to $150. (A) Day, single, without bath, $3; double, $5.50; week, single, $18; double, $30; month, single, $75 to $80; double, $125 to $130. (E) Day, single, with bath, $2.50; double, $3.50; week, single, $15; double, $21. (E)

OTHER HOTELS AND ROOMING HOUSES IN DENVER INCLUDE THE FOLLOWING:

ARGONAUT. 233 E. Colfax Ave. Cap. 130 Suites. (E) Day, single, with bath, $2.50; double, $4. (E) Day, single, without bath, $2; double, $3. O. Henry Schwalbe, Mgr.

COLBURN. 10th and Grant. Cap. 200. (E) Day, single, with bath, $3 up; double, $5 up.

COLORADO. 406 17th St. Cap. 200. (E) Day, single, with bath, $2.50; double, $4 and $5. (E) Day, single, without bath, $1.50; double, $3. D. E. Rudolph, Mgr.

COURT PLACE. 1635 Court Place. Cap. 75. (E) Day, single, with bath, $2; double, $3 to $4; week, single, $9 to $10; double, $12 to $14. (E) Day, single, without bath, $1 up; double, $1.50 up; week, single, $6; double, $7 to $8. M. B. Ewart, Mgr.

DENHAM. 609 18th St. Cap. 50. (E) Day, single, with bath, $2.50 and $3; week, single, $15. (E) Day, single, without bath, $1.50 up; double, $2; week, single, $7. Mrs. J. Fleming, Mgr.

MORRISON. 18th and California Sts. (E) Day, single, $1 up.

OLIN. 1420 Logan St. Cap. 250. (A) Day, single, with bath, $4.50 up; double, $7 up; week, single, $35; double, $55. (A) Week, single, without bath, $30; double, $45. (E) Day, single, with bath, $3 up; double, $4 up. John Huntington, Mgr.

PALMS. 1817 Glenarm St. Cap. 120. (E) Day, single, with bath, $2; double, $3; week, single, $10; double, $12; month, single, $40; double, $50. (E) Day, single, without bath, $1.50; double, $2; week, single, $7; double, $9; month, single, $30; double, $35. M. L. Farragher, Mgr.

RANIER. 1246 Stout St. (E) Day, single, with bath, $2. (E) Day, single without bath, $1.50. W. H. Cohen, Mgr.

ST. REGIS. 1630 Glenarm Place. Cap. 175. (E) Day, single, with bath, $2.50; double, $3; week, single, $12; double, $14. (E) Day, single, without bath, $1.50; double, $2; week, single, $7; double, $9. Morris Lehmann, Mgr.

TOURS. 1508 Lincoln St. (E) Day, single, $2 up.

WEST. 1337 California St. (E) Day, single, $2 up.

WEST COURT. 1415 Glenarm Place. Cap. 275. (E) Day, single, with bath, $2.50; double, $3; week, single, $12.50; double, $15; month, single, $45; double, $50. (E) Day, single, without bath, $1.50; double, $2; week, single, $9; double, $12; month, single, $25; double, $35. J. M. Sager, Mgr.

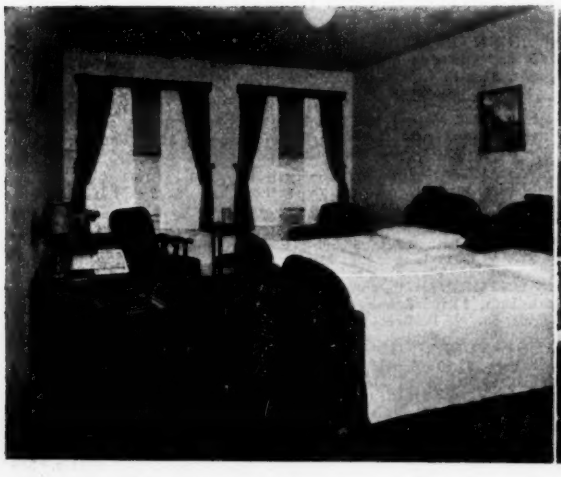
WYNNE. 1431 California St. (E) Day, single, with bath, $2; double, $3. (E) Day, single, without bath, $1.50; double, $2. W. B. Fink, Mgr.

Cap.—Capacity; (A)—American Plan; (E)—European Plan.

A. O. A. CONVENTION

DENVER JULY 25 to 30

Airplane view of Denver, showing location of Hotel Cosmopolitan



Typical bedroom, Hotel Cosmopolitan

Hall of Colorado, Hotel Cosmopolitan, the main Convention Hall

DENVER CALLS TO OSTEOPATHIC PHYSICIANS "COME UP IN 1927!"

Mile-High City in Colorado Rockies Possesses Many Interesting Diversions

RALPH M. JONES, D.O.
Publicity Chairman, Denver Convention Committee

Denver has the spirit of western hospitality, fittingly expressed in the cordial handshake of Denver osteopaths, while the scenery and surroundings differ from those of any other city in the world. The word welcome, in large letters in an artistic arch at the foot of Seventeenth Street, will greet delegates to the forthcoming American Osteopathic Association in July, assuring them a delightful and satisfying meeting in Colorado's capital.

Towers and domes of Denver's business district, flanked by beautiful residences, are outlined against the snow-capped Rockies, in the near distance. The State Capitol, situated on a terraced prominence, has an encrusted dome of gold leaf rolled from yellow metal taken from the mines of Colorado, while the Colorado State Museum across the street contains the relics of prehistoric Indian Cliff Dwellers.

And here, in the midst of cosmopolitan Denver, there is still a touch of early-day romance and history of the cowboy with his woolly chaps, the Indian day-dreaming in his skin tepee, and the pioneer with his overland schooner — a means of bygone transportation that has since been replaced in part by railroads.

Fancy and inspiration will lead the way to Indian trails in Denver's Mountain Parks—which the delegates will enjoy in the 65-mile Lariat Trip by motor-car trails now widened into comfortable automobile roads; or to the ruins of a mining town where prospectors became rich overnight when the sunset's gold was reflected in the precious ore they took from the hills!

Starting a mile above sea level, one passes the little white frame house where George M. Pullman, as a struggling miner, perfected his idea of railroad sleeping berth accommodations, and before long, Golden, where W. L. Douglas, later governor of Massachusetts, worked as a cobbler in 1867.

Denver's system of forty-four mountain park areas, starting fifteen miles west of the municipal limits, in the foothills of the Rocky Mountains, are rugged, timbered tracts, noted for their scenic beauty, and connected with Denver by good roads, paved part of the way.

This is the most popular four-hour trip out of Denver, giving the convention delegate and his family an idea of the front range of the Rockies and offering glimpses of the higher mountains in the Continental Divide, as well as touching the rock tomb of Colonel William F. Cody (Buffalo Bill), and Denver's Mountain (Municipal) Golf Course at Evergreen.

And then there is the novelty of gradually traveling skyward for a mile while covering the distance of 52½ miles in the Timberline Trail drive by auto from Denver to Echo Lake, sparkling gem cupped in the higher Rockies. This drive brings one to the foot of Mount Evans, elevation 14,259 feet, where eternal vigil is kept nearly three miles above sea level, for Denver, far below.

And to cap the climax of water sports, there is yachting on Grand Lake. These lake waters are at an elevation of 8,369 feet, in the Continental Divide, and each August a regatta is held under the auspices of the Grand Lake Yacht Club for a trophy cup presented by Sir Thomas Lipton.

So here, in Denver, the wanderlust of pioneer times is held entrancingly in vacation fancy. A delightful innovation is the coining of a golden sunset, say, at Cheesman Park, in full sight of the majestic barrier.

Standing here, the Colorado Rockies rise in ecstasy of imagination as the magic scenic melting pot. This may seem fanciful, but is thoroughly realistic as the sun slips behind the templed peaks.

Lingering rays of the sinking sun fire the gold-encrusted dome of the State Capitol nearby, before night enfolds it in purple shadow. This cupola of glistening gold is in tribute to Russell, Jackson and other prospectors for gold who in pioneer days made Denver the treasure chest of the nation!

It's an hour and a half of rapt wonder, spinning along and watching the reds, yellows and purples against the canopy of azure skies, cloud-flecked, painting the sunset's gold, reflected in precious ore which these same prospectors took from the Rocky Mountains.

Then as the curtains of night settle over the city, twinkling lights make of the fairy tale a reality. The electric fountain in City Park throws its vari-colored shafts of light across the water and the music of Denver's renowned band delights the soul.

So Denver osteopaths are calling: "Come up in July!"

DENVER RADIO PROGRAM

The committee, which is making the local arrangements for our annual convention in Denver the week of July 25, is planning to put on an osteopathic program from the General Electric Broadcasting Station K. O. A. on Wednesday night, July 27. This program will last from 8:00 to 10:00 P. M.

The entertainers will be drawn from the talent of the osteopathic profession, and several short health talks of about three minutes each will be introduced between the entertainment numbers.

Dr. H. S. Dean, who is chairman of the committee in charge of this program, asks that those in the profession or in their immediate families who have done any broadcasting, or those who have any talent for such work, will please volunteer their services, and correspond with him for a place on the program. He may be addressed at 512 Temple Court Bldg., Denver, Colo.

This is an excellent opportunity for some nation-wide publicity. We feel sure there is enough talent in the profession if they will come forward and make themselves known. If you are not gifted, but know someone else who can qualify, you will be conferring a great favor on the committee by telling Dr. Dean of any of our people who might be able to serve in this capacity. C. N. C.

AMERICAN OSTEOPATHIC SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Denver Convention—July 20 to 23, '27

The convention will open July 20 at 9:00 A. M. (the hotel will be announced later.)

The president's opening address will be followed by clinic examination and papers.

Friday afternoon will be set aside for trips to some of the sights of Denver.

The convention closes at noon Saturday, July 23.

GLENN S. MOORE, *President.*

Come Up To Denver
July 25-30

SECRETARY'S SCHEDULE

April 2—Denver, Colo.

April 4—Des Moines, Iowa. Professional meeting. College assembly.

April 5—Mason City, Iowa. Professional meeting. High school. Clinics.

April 6—Chicago office.

April 7—Niagara Falls. Kiwanis Club. High school assembly.

April 8-9—New York. Convention.

April 10-20—New Jersey. Convention. School assemblies.

April 21 or 22—Philadelphia, Pa. Osteopathic college.

April 25-27—Rockford, Ill. Convention. High school. College. Club.

April 28-30—Memphis, Tenn. Convention.
(Postponed on account of floods.)

May 1-2—Kansas City, Mo. Osteopathic college.

May 4-6—Wichita, Kans. Convention. College. High school. Club.

May 11-12—Milwaukee, Wis. Convention. Kiwanis luncheon. Local high schools and adjacent luncheon clubs.

May 13-14—St. Paul, Minn. Convention. Radio talk. Public talk.

May 26—Des Moines, Iowa. Address to graduating class.

May 28—Pennsylvania convention.

"AS IT WAS IN THE BEGINNING"

A. B. SMITH

"Our great national parks are sections of the old American wilderness preserved practically unchanged. They are as valuable, acre for acre, as the richest farm lands. They feed the spirit, the soul, the character of America," said Emerson Hough of Yellowstone Park, the proposed scene of the American Osteopathic Association Denver, 1927, post-convention tour.

A thoughtful man, reading this statement by one of the few great American writers who knew his own country, is apt to wonder (if he has not visited the parks) whether or not there can be truth in that first sentence. Can it be that in these days of automobile touring, of hard roads, of government administration, our national parks are still "the old American wilderness preserved practically unchanged?"

Hough goes on to say, "Of all the national parks, Yellowstone is the wildest and most universal in its apparel." And again, "As it is now constituted, it is the noblest sweep of unspoiled and yet fully accessible mountain country to be found within or without our national park limits."

"How can this be true?" wonders the man who has not visited Yellowstone Park. "Nearly everyone has been to Yellowstone, it seems. Many of my friends have been there several times. Can such a popular national shrine be practically unchanged?"

I visited Yellowstone Park first in the year 1904. There was no question then that the vast region, a national park for thirty-two years, but a railroad objective for only twenty-one years, showed but few signs of human invasion. Automobiles had not been introduced; the hotel and camp accommodations were comfortable, but comparatively limited; as we moved through the towering forests, along the high-perched, curving roads in our picturesque stage-coaches it was easy to forget altogether railroads, cities, twentieth century civilization.

The driver, one of those famous stage coach veterans of early Yellowstone days, entertained us with hair-raising stories. He had known Montana and Wyoming when it was frontier. We were carried back to the days he had known, for the setting was identical.

Had a red-skinned savage lurked behind a rock at the next curve of the road we would not have been greatly surprised. After all, it was more amazing that a bear should await us there, for the bear was an earlier native of this wilderness than the Indian, and we knew that he was still living a wild bear's life. We felt like intruders as he ambled into the forest, ignoring our presence rather contemptuously.

Yellowstone Park was everything Emerson Hough said of it when I saw it in 1904.

Twenty years went by before I found another opportunity to enter the mountainous boundaries of the mysterious geyserland. In twenty years, I thought, there would have been many changes. I must not expect that same feeling of being carried back into the past. Fine roads, excellent bridges, new accommodations, motor cars would have changed Yellowstone Park. It would still be beautiful, I reasoned, but it could not seem a wilderness this time.

I have been reading over the log of that second tour and recalling the delight I felt in discovering my mistake.

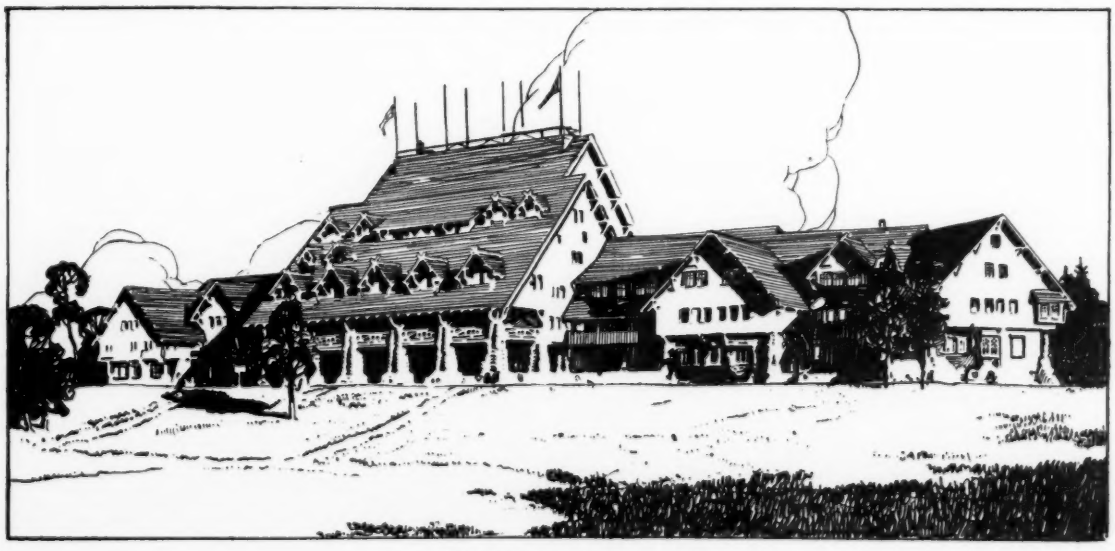
We did not take the regular "In Gardiner-Out Cody" tour in 1924, for my time was limited. We reached Gardiner at three o'clock in the afternoon of September third and left from the same gateway the following night, but within that short time I saw enough of Yellowstone Park to reassure myself that it is still "of the old American wilderness."

Gardiner, Montana, is a little cluster of homes and stores in a valley between high mountains. The spurs of lanky Montanans from nearby ranches clank on the board walk that runs along in front of the row of frame buildings constituting "Main Street." Tourists buy supplies in the same shops, and cars are parked outside, but there is a tie-rail for restless bronchos and you see as many weather-beaten Stetsons as you do less-interesting straw hats from the east.

We were met by Mr. H. W. Child, president of the hotel and transportation company and by Mr. Vernon Goodwin, president of the camps company. Harry Child has organized a system of motor car transportation as remarkable as his famous stage-coach organization. Two eleven-passenger motor coaches were ready for our party —big yellow cars admirably suited to the mountain service they must give.

Through the rugged Roosevelt Arch, dedicated by the cowboy president "For the Benefit and Enjoyment of the People" (the words inscribed upon stone overhead) we glided far more comfortably than any stage coach could have borne us. The wide, smooth road led us along the grassy Gardiner Flats where prong-horned antelope come down to graze at dawn and dusk. Then within the space of a five-mile ride we climbed a thousand feet. The Gardiner River churned in a white frenzy beside our rock-walled road. An osprey, or fishing eagle, circled above a towering pinnacle to settle upon a nest six-feet wide. Again my attention was called to a steaming river of boiling water within but a few feet of the icy waters of the Gardiner.

Mammoth Hot Springs, the "capitol" of Yellowstone Park, suddenly confronted us in its green valley. We did not stop at the little settlement from which the park



Old Faithful Inn, Yellowstone Park *Courtesy N. P. Ry.*

Courtesy N. P. Ry.

Glacier Region, North of Missoula, Montana Rockies

is governed. The white buildings that had been Fort Yellowstone when I first saw them, now house the men and women who have charge of the park administration. We passed the museum, where President Garfield's stage coach guards the door, and circled the green upon which Mammoth Hotel faces. Although this white, extended building is larger than the old Mammoth Hotel, it did not seem to differ greatly from the hotel I remembered.

The light of late afternoon shone upon the terraces of the Mammoth Hot Springs as we drove slowly past them. Time has altered the contour of many of the formations in twenty years, but they are no less beautiful today, steaming, irridescent, always larger and more majestic than you remember them to be.

Friendly Buffalo in Yellowstone National Park

Courtesy N. P. Ry.

As we drove past Mammoth Camp I was surprised to see how this division of the park accommodations had been developed. The lodges, grouped about an attractive log recreation building, were neat and inviting. We saw a stream of laughing young people headed for the swimming pool, to bathe in the warm water from the hot springs.

Taking the road that leads from Mammoth to the Grand Canyon, we continued to ascend until we looked down upon the little settlement and left it far behind. Soon we were following the Yellowstone River, passing Tower Falls, and marvelling at the curious needle-like formations in the rocks that imprison this powerful stream. As this rocky canyon widened and deepened, its walls assuming the fiery colors I remember so well, we turned aside on to the road that leads to the top of Mount Washburn.

I consider the ascent of this old volcano one of the finest scenic rides I have ever had. We wound upwards on a one-way road through fields of brilliant wild flowers, past great paths of snow unmelted by the warm sun, higher and higher until we drew up beside a small stone look-out on the summit, 10,000 feet above sea level.

All Yellowstone Park was spread out before us. A great red gash running through green forest tops marked the Grand Canyon. Far across the green, misty expanses lay the blue mirror of Yellowstone Lake. Snow-crowned peaks thrust their jagged heads into the clouds in an unbroken line to the east of us, where the Beartooth Mountains hide the Grasshopper Glacier country. The Tetons loomed seventy-four miles away in the south, and the mountains of the Gallatin Range in the west.

We descended about 6 o'clock to the Canyon Hotel, having resolved to save the Grand Canyon for the following day. I found the Canyon Hoel remarkable—a vast, picturesque structure, one mile around its foundation, built of native woods in a unique style of architecture reminiscent of the forest without being actually rustic.

Dinner in the great dining room and dance music in the beautiful lobby kept us busy until it was time for sleep.

Thursday, September 4, dawned another glorious day with bright sunshine, a blue sky and invigorating air. Wyoming, I suppose, had the right to claim that sky, but it was of that particular clear blue which folks call a "Montana sky."

After seven o'clock breakfast we entered our big yellow cars again and drove to Inspiration Point for that overwhelming view of the Grand Canyon of the Yellowstone. Truly, there is nothing else in the world beautiful in the same sense in which this canyon is beautiful. I consider Kipling's description of it superior to anything which has been written of it, but even that is inadequate:

> "All that I can say is that without warning or preparation, I looked into a gulf 1,700 feet deep, with eagles and fish-hawks circling far below. And the sides of that gulf were one wild welter of color—crimson, emeralds, cobalt, ochre, amber, honey splashed with port wine, snow-white, vermilions, lemon and silver-grey in wide washes. The sides did not fall sheer, but were graven by time and water and air into monstrous heads of kings, dead chiefs—men and women of the old time. So far below us that no sound of strife could reach us, the Yellowstone River ran, a finger-wide strip of jade green. The sunlight took these wondrous walls and gave fresh hues to those that Nature had already laid there. Evening crept through the pines that shadowed us, but the full glory of the day flamed in that canyon as we went out very cautiously to a jutting piece of rock—blood-red or pink it was—that hung the deepest deeps of all."

From Inspiration Point we drove to Artist's Point, where an even more inspiring view is obtained. It was from this point Moran made his famous painting which hangs in the Capitol at Washington.

Leaving the Canyon behind with the reluctance one naturally feels at deserting a scene that has moved one greatly, we proceeded to Yellowstone Lake, 7,741 feet above sea level. In the widespread Lake Hotel, as inviting as an old southern plantation home, I found many changes, for it has been greatly enlarged since I first saw it. The dining rooms face upon the Lake and there is infinite restful pleasure in gazing across that wide expanse of blue toward the white-tipped Absaroka Mountains and the Sleeping Giant.

The size of Yellowstone Lake has surprised me both times that I have seen it. It is the largest lake in the world at so high an altitude with the single exception of Lake Titicaca in the Andes. The shoreline extends for 100 miles and the lake is twenty miles wide. Islands of some size are scattered upon the surface of the blue water and the boats of delighted fishermen are almost always to be seen going out or returning with an excellent catch of lake trout.

From the lake we passed on to the Upper Geyser Basin and Old Faithful Inn, crossing the Continental Divide twice and viewing on the way many curious phenomena—mud geysers, boiling pools of brilliant color and strange hissing caverns.

Old Faithful Inn deserves the fame which it enjoys all over the world as the most remarkable log hotel ever conceived and executed. Our party greatly enjoyed luncheon in the rustic dining room and Old Faithful Geyser displayed its powerful beauty twice while we lingered there, playing to a height of 150 feet.

Shortly after two o'clock the schedule called us to our cars again, and we took the drive from Old Faithful to Mammoth Hot Springs, through a world in which Dante would have found inspiration for his Inferno.

Roaring geysers hurled their tons of boiling water toward the sky, flower-like pools steamed and glistened in the sunlight, the Fire-Hole River and the Gibbon River foamed beside the road, Hell's Half-Acre sent up its sulphurous columns of steam, and every curve of the road revealed some new curiosity of Nature.

More beautiful than any of these were the glorious blue sky, the still green forests and the clear air which filled us with the zest of life.

As we approached Mammoth Hot Springs, we made a short detour to the buffalo corral where a small part of the wild Yellowstone herd is kept for visitors to see. The large herd roams the foothills of the Lamar Valley in a distant part of the park, carefully watched by special rangers. Had we been able to visit the park several days earlier, we could have witnessed a roundup of from four to five hundred buffalo in that eastern section of the Yellowstone.

Our tour of the park had been limited to only 160 miles and we had made it in far too short a time, but I had been convinced long before we reached Gardiner Gateway to board a homeward train that Yellowstone Park remains "practically unchanged."

Deer, bears, woodchucks, elk, buffalo, wild ducks and geese, pelicans,—all the countless animals and birds of the region had witnessed for me that their natural home has not been greatly disturbed by the advent of man. The mountains had witnessed, and the forests, the rushing trout streams and the green grazing meadows. Yellowstone Park had spoken to me of times far removed from the twentieth century, and I said with Emerson Hough:

"Thank God, you Americans, that Yellowstone is now and ever shall be—your own! Thank God that there you still can see a part of the Old West—your own West—as it was in the beginning!"—*N. P. Ry.*

The earliest medical schools on record were at Cyrene in Northern Africa, Crotona (a Greek town in what is modern Calabria), Cnidus in Asia Minor, and Cos on the island of the same name at the mouth of the Gulf of Halicarnassus. From the medical school at Cos arose the man who first placed medicine upon a scientific basis, Hippocrates.

The first American to graduate in medicine in Europe was John Moultrie of South Carolina, 1749.

O. W. N. A.

PAGEANT FOR DENVER CONVENTION

One of the outstanding features of the entertainment program at the National convention will be the presentation of an osteopathic pageant, "The Luminous Shadow," as a memorial to Dr. A. T. Still.

It was written by a Colorado woman, Mrs. Delphine Harris Coy, and portrays the history of the curative practice from the cave man to the present time. In its allegorical presentation it shows his place among the great reformers of all ages.

The O. W. N. A. has secured the privilege of filming the pageant (provided they can finance it), believing that it should be preserved for future generations as it will prove most valuable for use as educational and publicity material. A vigorous campaign is under way to bring about the fulfillment of this ambitious project and our women everywhere are urged to cooperate to the fullest extent of their ability to prove what real team work can accomplish.

IOWA

Dr. Herbert Martin of Drake University spoke on "Reason or Prejudice—Which" before the Iowa Osteopathic Women's Association on February 14.

TEXAS

Dr. Samuel L. Scothorn and Mr. W. C. Graves of the A. T. Still Research Institute foundation committee were speakers at the February meeting of the Dallas Osteopathic Women's Club. Officers were elected as follows: President, Dr. Genevieve Laughlin; vice president, Mrs. Samuel L. Scothorn; second vice president, Mrs. H. F. Eppens; recording secretary, Mrs. J. S. Crawford; corresponding secretary, Mrs. H. M. Bowers; treasurer, Mrs. Merle Shook; parliamentarian, Dr. Mary Lou Logan. The same club celebrated its own birthday with a dinner on March 14.

Dr. Genevieve Laughlin gave the birthday toast, and Dr. Mary Lou Logan responded with a history of the activities and growth of the club during the year. Dr. Logan said the club was organized with a membership of thirty, and had cooperated with the Dallas Osteopathic Association in maintaining the osteopathic free clinic for children, which meets on Tuesday and Friday afternoons of each week in the basement of the First Unitarian church. Two doctors and a trained nurse are in attendance and hundreds of treatments have been given to under-privileged children without cost to them.

Miss Merle Shook gave a toast to members of the newly-formed Dallas Osteopathic clinic. Dr. J. W. McPherson, of the clinic staff, responded.

Dr. Laughlin spoke on "The Scope of Osteopathy." Miss Allene Hickey of Southern Methodist University sang two numbers. She was accompanied by Charles M. Kiker. Little Olga Delight Scothorn danced.

Mrs. E. V. Campbell was toastmistress and Mrs. H. F. Eppens was in charge of arrangements.

THE OSTEOPATHIC PAGEANT

One of the interesting features upon the entertainment program of the Colorado Osteopathic Association for the National Convention is the presentation of the pageant, "The Luminous Shadow." This is to be our "memorial service" given in honor of the "Old Doctor." It portrays the history of curative practice from the cave man to the present time, and shows the place of Dr. A. T. Still among the great reformers of all ages.

The author, a Colorado woman, Mrs. Delphine Harris Coy, presents the "arguments" as follows:

ACT I

Allegorical presentation to show the place that Dr. A. T. Still holds among reformers of modern therapy, according to M. A. Lane.

ACT II

To give recognition to the faithful few who stood by and encouraged Dr. Still during his early days in Kirksville, when the ignorant and superstitious were so full of doubt and ridicule.

ACT III

To show how Dr. Still's successful work in osteopathy brought such members to be treated that he realized he must multiply the gift of his healing hands

by founding a school and teaching the art and science of osteopathy—he founds the A. S. O.

ACT IV

To show the merited results of Dr. Still's efforts. How Progress recognized him, how Fame and Honor came while he was yet living.

Believing this beautiful spectacle, which is to be produced by the Denver Community Players in the Civic Auditorium, should not be presented just once and then forgotten, the O. W. N. A. secured the film rights for producing the picture.

This unusual opportunity gives our organization the privilege of making a wonderful contribution toward spreading the gospel of osteopathy throughout the civilized world.

The value of visual education along this line cannot be over-estimated.

In order to finance this undertaking, letters asking for contributions have been sent only to the women of the profession (for the film is a project of and by the women). The responses so far have been most generous—the Film Fund to date amounts to $450.

When completed, the film will be the property of the O. W. N. A., to be utilized for the benefit of all O. W. N. A. organizations. The primary idea was that it could be used as educational propaganda at state, district and local osteopathic meetings when programs of interest to the public are desired.

In some communities it might be of practical value shown in regular movie houses, but that is not the main objective.

Each and every member of O. W. N. A., active or associate, should deem it a privilege to be able to contribute to such a cause, to preserve for future generations this wonderful tribute to the life and genius of Dr. A. T. Still, who did so much for the physical, as well as for the economic welfare of womankind.

American College of Osteopathic Surgeons

OREL F. MARTIN, D.O., Publicity Director
464 Commonwealth Ave., Boston

The charter for the American College of Osteopathic Surgeons was issued by the Secretary of State of the state of Missouri on February .

The original incorporators and trustees were:

Dr. George M. Laughlin, Kirksville, president.
Dr. J. Deason, Chicago, vice-president.
Dr. S. D. Zaph, Chicago, secretary.
Dr. Orel F. Martin, Boston, treasurer.
Dr. O. G. Weed, St. Joseph, trustee.
Dr. Frank L. Bigsby, Kirksville, trustee.
Dr. Harry L. Collins, Chicago, trustee.

With the issuance of this charter the power to grant the degree of Fellow of the American College of Osteopathic Surgeons was conferred upon the organization.

It is the intention of the incorporators to create opportunities in osteopathic hospitals, to teach surgery from the osteopathic viewpoint.

In due time the college will so arrange their course that there will be ample facilities for surgical training in approved osteopathic institutions for all those who show a special aptitude for surgical work.

The officers will hold a meeting in New York on April 9 to arrange for the next meeting of the organization at Denver.

OREL F. MARTIN.

CHRONIC OSTEOMYELITIS

ARTHUR COLLOM JOHNSON, D.O.
Lincoln, Kansas

This little fellow has come to the hospital for relief from pain. About two years ago (he is now five) he fell from the steps of his home and struck the lower third of his right thigh upon a stone. The leg immediately swelled and became discolored. A "regular" physician was called to care for the leg, which he did by applying arnica and so forth. It didn't occur to the physician that a roentgenogram was indicated. The leg finally recovered and was apparently normal, with the exception of a perceptible enlargement of the lower third of the shaft of the femur.

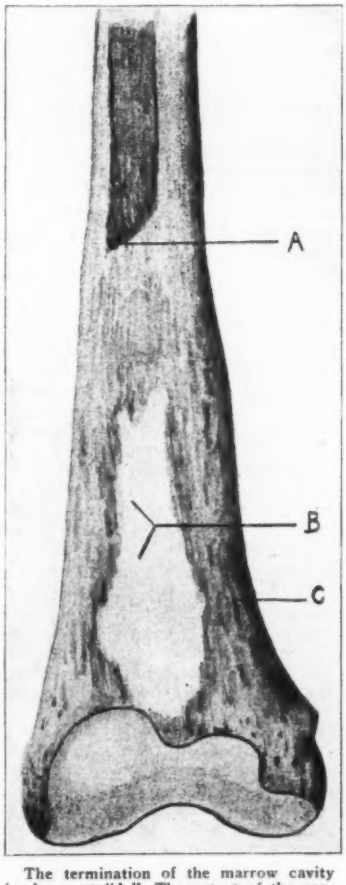
For the past year the youngster has complained of agonizing pain which comes periodically. These attacks occur in the region of the knee, and the boy is frantic for an hour or more, when the pain gradually diminishes. He is too young to give us much of a description of his symptoms. He does not limp and does not appear ill in any way, with the exception of an evening rise in temperature to 100° or thereabouts. The attacks of pain come on not oftener than once or twice a week. They are becoming more frequent, it seems.

We, of course, x-rayed his leg from the hip joint down, and found that the lower third of the femur is nearly twice as thick as normal. The marrow cavity appears to come to an end at about the middle of the shaft. Below this termination there is apparently solid bone for an inch or two, and then we can see a peculiarly thinned area reaching nearly to the epiphyseal line and occupying half the diameter of the bone.

We are uncertain about the character of the contents of that cavity. We are going to take the top off of it this morning and see.

There are two conditions to think of. One is Brodie's abscess, the etiology of which is somewhat clouded. Brodie's abscess may appear as a result of injury with subsequent hemotogenous infection, or it may be the result of a low grade osteomyelitis that failed to kill the patient. If this is Brodie's abscess it is an immense one.

Another condition which seems more reasonable, considering the boy's symptoms, is a cystic degeneration of the bony tissue, brought on in some way by that injury two years ago. The blood supply to that area may have been impaired by the trauma, which certainly was sufficient to nearly crush the bone. There may have been an osteomyelitis here, but there seems to be no evidence of sequestra in the roentgenogram.



The termination of the marrow cavity is shown at "A." The extent of the cavity is shown at "B," and the increased bone formation "C" throughout the entire lower third.

We start our incision midway between the inner border of the patella and the abductor tubercle of the femur and carry it obliquely upward and outward.

A tourniquet has been applied to the leg from the toes up, emptying the veins of blood, and is now encircling the upper third of the thigh. Even with the tourniquet in place the venous ooze is aggravating. We keep in the line of muscle fibers as well as possible and separate them with the handle of the knife. The thickness of the tissue in this area is always surprising.

The periostium is somewhat thickened but seems normal otherwise. We incise it to the limits of the muscle incision and separate it from the bone for a short distance on either side.

With a small bone chisel and copper mallet we cut

our way down through the thickened bone, which bleeds freely. Bone that bleeds is good bone. We are at last into a softer tissue which is of about the consistency of cancellous bone. A probe searches out the various ramifications of this cavity of cavities. No pus has appeared. What fluid was in the cavity has blended with the venous ooze and cannot be identified. The roof of the cavity is freely chiseled away, and the spongy bone removed with the curette. After the cavity is smooth, a narrow strip of iodine soaked gauze is packed into it tightly. After a moment or two this gauze is removed.

A narrow strip of rubber dam is carried to the lowest depth of the cavity and will be brought out through the incision for the purpose of giving vent to any infectious material that might be present. The cavity fills slowly with blood, and if infection does not take place, this blood will clot and serve as a scaffold for the osteoblastic erection of new bone.

(Continued on page 709)

Ear, Nose, Throat and Eye

CONDUCTED BY AMERICAN OSTEOPATHIC SOCIETY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

J. M. Watters, D.O., Chairman

THE BATES METHOD OF TREATING IMPERFECT EYESIGHT WITHOUT GLASSES

I

JEROME M. WATTERS, D.O.
Newark, N. J.

The Bates method of treating imperfect eyesight without glasses is rather a broad one. I shall endeavor to give my personal experiences and impressions covering a period of years in as impartial a way as possible.

To say that all glasses should be thrown away is as misleading as to say that a narcotic should never be used. It is true that there are many people wearing glasses, who, with a little effort on their part, might lay them aside to their everlasting benefit.

The problem of selecting cases for this method of treatment is often more of an art than the treatment itself. It is not difficult to show a patient the proper relaxation methods, but it is often difficult to instill in that patient a proper attitude of mind or to get him in a receptive mood where he will get the maximum amount of benefit. Some are just not temperamentally suited for this type of treatment; some just naturally fight against using their imaginations. They say to themselves that such and such a thing is impossible, so why try to imagine it? A majority of these can eventually be corrected, but some never. Many patients are not the type to do things for themselves. They want the doctor to do it all. Such individuals make poor subjects for this treatment.

If there is some focal infection, gastro-intestinal disturbance or nasal pathology present, one cannot expect to get the best results. All these must be taken care of locally and osteopathically, although sometimes the general body relaxation received by relaxing exercises for the eyes will work wonders in other parts of the body. A very striking case which I recall was a woman weighing about 200 pounds, who, among other things, had suffered for years from a marked swelling of the ankles. The first time I saw her I showed her the long body swing, and then did not see her again for three days. During that time the swelling in her ankles disappeared. I believe that the long body swing through its relaxing properties established better circulation with the result recorded. Just because an occasional case will respond in this way, however, is no excuse for overlooking other pathological conditions.

When the day of preventive medicine does arrive, the Bates method will take its proper place in therapeutics. Dr. Bates deserves a great deal of credit for the effort he has put forth in perfecting his system of treatment. Credit should be given where credit is due, whether it be within our own ranks or outside.

For children and young people it is of undoubted value. Not every case can be cured, but certainly a large majority—so large in fact, that it is worth a trial in practically every case. Children are more or less indifferent to their own well-being, but if patience is exercised and proper encouragement given, many cases which appear to be failures at the end of the first four or five months will improve greatly over a longer period of time.

The amount of improvement which one may expect over a given period of time in a given case is best determined by the use of the pin hole disc. Occasionally a patient will go beyond this test, but usually not. This determines the error of refraction which is most easily corrected by the Bates method.

Optic nerve atrophy and similar conditions will improve to some extent, but a cure is out of the question. Even in optic atrophy due to syphilis, one may get marked results. High degree progressive myopic cases are incurable in my experience, as most of these cases show involvement of the optic nerve or some other organic trouble. Perhaps in those cases where there is no nerve involvement this is not so much the fault of the method as of other factors. Lesser degrees of myopia respond very readily. Teaching a patient to read 20/20 and to retain 20/20 is a different proposition. If you can, by your treatment, demonstrate that a patient can read 20/20 it is 99 times out 100 the patient's fault if he does not learn to retain it.

CATARACT

Many cataract cases will respond to this treatment; incipient cataracts are very amenable to treatment, with complete cures in a majority of cases. The immature types can usually be arrested and vision improved, but the deposits which are already present do not seem to absorb to any great extent. The so-called hard cataract can not be treated successfully, and such cases should be operated upon. After operation treatment can be given with beneficial results.

HYPERMETROPIA

I have not yet satisfied myself as to what cases of hypermetropia will most readily respond to treatment. The hypermetropic eye is not always a far-sighted one. The distance strain is usually more readily corrected. The unconscious as well as the conscious effort put forth to see at the near point often retards many cases that otherwise would respond very readily. Relaxation at the near point always lessens hypermetropia, while strain always increases it. In the eagerness to see and to improve a vision it is often hard to get this across, especially to patients who must of necessity do near work. Many times, under proper treatment, the vision will improve and become better at 6 or 8 inches than at 12 or 15 inches.

SQUINT

Many cases of squint are amenable to this treatment, both in the child and the adult. The earlier squint is treated the better the prognosis. Both latent and actual squint will respond to treatment, the acquired giving a better prognosis than the congenital.

The Bates method has not only a distinct treatment value, but as an educational feature it is most worthy. Certain individuals, because of their type of employment, are unable to lay aside their glasses long enough to take this treatment. For these, the educational feature is valuable, because many complain of their eyes even with glasses. Showing them the causes of eye strain and how to relieve it helps them immeasurably and relieves most of their discomfort. Even though a case cannot be cured and must necessarily continue wearing glasses occasionally, treatment is very valuable in preserving vision, and thus doing away to a large extent with the necessity of constantly increasing the glasses. It is a well known fact that once one starts to wear glasses it is a constant progression, in most cases, of stronger and stronger lenses. This is because the original cause of the eye-strain and the necessity of wearing glasses has never been corrected. If this is corrected and proper exercises given, the eyesight will remain the same for a long time. If the glasses are not worn except when necessary a reduction from time to time can often be made.

The theory upon which this treatment is based is that the extrinsic muscles of the eye are at fault instead of the lens and ciliary muscles. That instead of just the lens lengthening and shortening it is really the entire eyeball which is at fault. The fact that an eye in which the lens has been removed will accommodate seems to bear out to a certain extent this claim.

The refraction of an eye is continuously changing as it responds instantly to any state of mental or physical being. Refraction will change when reading unfamiliar writing or looking at unfamiliar objects. Sudden exposure to strong light, sleep, noise, mental or physical discomfort, all these change refraction. A glass which may be absolutely correct at one moment may be slightly off the next, subjecting that eye to a slight degree of strain. Any effort on the part of the eye to see always creates a strain. One may temporarily improve sight by effort, especially in myopia, but it cannot be held. The eye possesses perfect vision only when it is absolutely at rest. For this reason it is better to go without glasses, if possible, as it allows the eyes at times to assume a normal or near normal state. This is not possible with glasses as they do not accommodate themselves to our eyes, but it is necessary for the eyes to accommodate themselves to the glasses. This of necessity produces a more or less constant strain as one is constantly maintaining an error of refraction which otherwise might not be present. One thing which I have particularly noticed is that the vision invariably improves immediately after glasses are discarded, and very few complain of the slightest degree of discomfort.

The care and use of the eyes is undergoing a radical change. Progressive eye specialists are learning that practices which once upon a time were supposed to be harmful, are really helpful. This has come about through the application of the Bates method.

The sun, which was supposed to be exceedingly harmful, has been found to be very beneficial in practically all types of cases. Fine print, reading in a dim light, or on moving vehicles, unless the motion is too exaggerated, has been found to be beneficial and relaxing. Imagining objects moving in contrast to thinking of them as stationary is another principle brought out in this treatment which is helpful to everyone. Resting the eyes just as we would any other muscular attached organ of the body is also very essential to their well being, and should be practiced frequently.

In conjunction with all these things, attention should be given, as I mentioned before, to the general health. The diet should be regulated, especially in cataract cases, various forms of outdoor exercises should be prescribed, and the patient should be encouraged to drink plenty of water. Constipation should be guarded against, and all osteopathic lesions corrected. Correction of lesions is very essential, as lesions in the cervical and upper dorsal region will impair the metabolic processes of the eye through disturbance of the nerve and blood supply, which may cause all manner of eye disorders.

Business Efficiency

THE EFFICIENT OSTEOPATH

C. C. REID, D.O.
Denver, Colo.

VI.

EXPENSES NOT USUALLY CONSIDERED, OR THE HIGH COST OF INEFFICIENCY—CONTINUED

We have been considering some of the inefficiencies. We have called attention to this from the negative side with a view to making it more impressive. We are calling attention to things that are done in the wrong way, and to unnecessary things and items that are neglected, with the idea of pointing out more forcibly the things that should be done and impressed on our minds, the consequences of inefficiency. Some further causes of loss are as follows:

Equipment.

1. Neglect of proper diagnostic instruments. Diagnosis is the foundation of all correct treatment. Treatments that are given without a careful diagnosis and an understanding of the pathological conditions existing are unscientific and merely hit or miss.

At one time I had a watch that would frequently stop running. I never knew exactly what was the matter with it, whether it needed oiling or had a slightly bent cog, a weakness of the hair spring, or an imbalance of some of the wheels or some obstruction by a small foreign body. I never knew, but without making a diagnosis I could take a pin and punch the works a little and it would run, sometimes for days or weeks without stopping again, if it were properly wound.

If a doctor does not believe in finding the chemical balance of the system, its glandular efficiency, the condition of the blood, the status of the secretions and the emanations as well as the mechanical alignment in many conditions, he is bound to neglect doing the things that he should and do some of the things that he should not.

The physician should use every scientific means at his command to arrive at a perfect understanding of the condition of the patient from the psychic, chemical and mechanical standpoint. In order to do this he must have a good equipment of diagnostic instruments. I have been in some offices that did not even have a clinical thermometer. It is a general rule for a physician to carry a thermometer either in his pocket or in a convenient bag in making a call. Many have several thermometers.

A sphygmomanometer should be a regular equipment of every physician's office. Taking the blood pressure should be a universal procedure on people above forty years of age and even under that age it is a good practice. Some doctors do not have a stethoscope. Many who have do not have a good one. In some offices the stethoscope is like the proverbial old family Bible, stored away in some corner, seldom seen and very seldom used. The stethoscope should be used on every new patient examined. Every doctor who does any kind of surgery should have the proper kind of instruments for what he does.

Nearly every doctor does some kind of surgery, at least lancing a boil or opening an abscess if nothing more. Every physician needs a few surgical instruments. He should have these ready, always in trim, so that they may be had at the moment.

In order to make a correct diagnosis or even attempt in a reasonable way to make a diagnosis in the large percentage of cases that come into the office the eye, ear, nose and throat must be examined. Special apparatus is required in such an examination. A good head mirror, 3½ inches in diameter, containing a 3/8 inch hole, is the best kind of instrument for getting light into the ear, nose and throat. A sixty-candle power electric light with frosted globe will furnish the proper light for reflection with the head mirror.

A tongue depressor with a Ruddy tonsil compressor will aid greatly in making a diagnosis of tonsil conditions. The doctor should look at the tonsils and compress them while the patient gags. A nasal dilator and a set of ear specula will make observation of the nose and ears possible.

An opthalmoscope belongs more in the office of the specialist and is used where there is some internal disease of the eye. Unless the physician has been trained in the use of the opthalmoscope he should have the cooperation of a specialist. A vaginal speculum and a protoscope should be used by the general diagnostician, unless he is in touch with a specialist on that part of the body.

Of course, specialists in any line should have all the best apparatus for their particular line of work. But what I have mentioned should be in the hands of every general diagnostician. All these instruments should be kept where he can get his hands on them readily, or else he will fail to make use of them to the extent that he should. It goes without saying that every diagnostician and general practitioner should own or be connected with a laboratory.

2. Poor Laboratory or None.

It is impossible for every doctor to have a completely equipped laboratory. Fortunately in all cities there are now good laboratories with technicians who devote their whole time to laboratory work. They make a special study of laboratory equipment and technic. For complete laboratory examination it is more essential that the general run of doctors have complete laboratories. In many cases they should secure the cooperation of the laboratory technician in making their diagnosis. Those who live in small towns and localities where there is no completely equipped laboratory for more elaborate laboratory diagnosis can send the specimen to laboratory men in nearby cities and soon have a complete report.

It is essential that every physician should have a small laboratory so that he can at least make a complete

urinalysis. One who is not close to a complete laboratory should have a more elaborate outfit than a urinalysis case. Some stains and a good microscope will help him to do much bacteriological work.

A frequent use of the x-ray is essential to correct diagnosis. Every physician should be in touch with an x-ray laboratory.

Dr. Cabot says that a diagnosis is more often wrong, not because the doctor does not know about such conditions, but because he fails to look for them. This is more likely to be true in cases where laboratory facilities are needed. The lack of laboratory connections is a source of inefficiency which no one can afford to allow.

3. *Lack of Good Tables, Stools, Sterilizer, Dressings and Wrappers.*

An osteopathic physician should be equipped with one or more substantial tables. The best is not too good Expensive machinery on a table is not essential, but may be convenient at times. A strong stool with properly graded rounds on it will help in some forms of technic. A good sterilizer is essential to a complete office if any kind of surgical work is to be done and any dressings are to be used.

The doctor should have a number of wrappers according to a good pattern, open front and back. These should be kept in his office for examination purposes and for the use of people who only come a few times and do not care to secure a private wrapper. These wrappers should be kept laundered.

A set of boxes or drawers in which to keep these wrappers is very handy, while people who have private wrappers should have private boxes or drawers so that they can be assured their wrappers are kept exclusively for them. In this way people can be encouraged more readily to bring their own wrappers. Particular people are especially touchy about wearing a garment that someone else has worn. This is essential, for reasonable care against contagious and infectious diseases.

Equipment along these lines, if properly handled, will add to the source of one's income.

4. *Desk, if Used, Unkept.*

Every doctor wants a desk. Practically every doctor has one. In my travels over the country visiting doctors' offices I remember particularly one office into which I stopped to see how the doctor ran his business. His desk was in the reception room, where it should never be. It was a roll-top affair. Papers, magazines, journals, letters and all kinds of literature were piled on the desk so profusely that it was impossible to shut down the cover. It looked as though he was getting ready to move and had dumped all his literature in a conglomerate mass on his desk. This was not the case, however, for things had apparently accumulated for years. The only place he had to lay anything that he brought into the office was on the leaf of the desk. This, of course, was an extreme condition seldom seen.

However, there are all gradations of this disorder connected with doctor's desks. It is always indicative of a disordered mind. If a doctor has great ability in other lines, he cannot afford to allow his desk to be littered and unkept. If his mind is not disordered in any way, it will soon become so if he has to live in such confusion. Inefficiency in keeping things properly classified and in order is a source of loss which cannot be estimated in dollars and cents.

5. *Shoddy Furniture, Rugs, Decorations, etc.*

We knew a young doctor starting in practice who bought some cheap upholstered furniture and had it shipped to his office from some distant point. Inside of two years the upholstering had so faded that the furniture looked like cast-off junk that somebody had left behind after moving. It was the same way with his rugs. The decorations on the wall were cheap and out of date.

The table in the osteopathic treatment room had cost about eighteen dollars. It had a leatherette covering. Towels had not been used under the patient's head and there was a big round grease spot where patients' heads had lain. The whole room had an appearance of cheapness and lack of sanitation. This doctor was located in a good town and had what was considered a good practice, at least he thought he was doing well. Getting on the inside of his work, however, it was discovered he was doing about one-fourth of the business he should have been doing. He was making a mediocre success in spite of his many inefficiencies.

It has been said that osteopathy is so meritorious that even a dub can make his living out of it. Any observer of many of our offices and methods of procedure will be convinced that this must be true.

6. *Cheap Stationery.*

We receive letters from numerous osteopaths written in longhand (to which there is no objection if it is neatly done), on the cheapest kind of paper or ten cent tablet material. Not only do they not have neatly printed, embossed or engraved stationery, but they buy the cheapest thing on the market without spending anything on printing or embossing.

A physician's standing and the whole personal equation is reflected in the external manifestations about his office, the stationery along with other things.

7. *Things Not Kept Handy.*

We have referred to the contents of the desk, to dressings, sterilizers, stethoscope, thermometer, sphygmomanometer, head mirror, surgical instruments, etc. If any of these things are stored away in some place where you cannot readily get hold of them they will not be used as frequently as they should be.

It is well to have a special room where all these things may be kept. Patients might be put in this room for the first time when examination and diagnoses are to be made. In this way, all this equipment might be kept handy and there would be no need to duplicate it. The office secretary may be of great assistance to the doctor in bringing some of this apparatus from one room to another in case it is necessary, while the doctor can stay in the room in touch with the patient.

Once an examination is begun, that particular sitting should not be interrupted, but the examination should be completed just as far as possible without the doctor leaving the patient. When he is through and leaves the room, he should have finished as far as he can at that time. Then he should not see the patient again until his next appointment. Having everything handy will help this psychological phase of practice.

8. *Short of Modern Office Helps.*

A typewriter, professional cards, case report blanks, day book, ledger, filing system, library, bookcases, etc., are all necessary for a doctor who has a large practice and considerable correspondence. Being a busy man, he cannot take care of his correspondence by longhand letter writing. It is proverbial that doctors are poor correspondents; it is also proverbial that they are not good business people, that they do not do business on a business basis. The reasons are very evident when one makes a little study of efficiency. They do not see the connection between these modern office helps and professional affairs.

The business side of practice is extremely important, and these modern office helps are essential to handling a good practice. The modern doctor should not only have a typewriter, but he should have a secretary who can handle that typewriter. Then, having good stationery, he should answer his letters promptly.

I have referred many patients to doctors all over the country, but it is very seldom I ever have one word of thanks or any kind of recognition of the fact that the patient was sent to him. A good percentage of business is built on courtesy and proper sentiment. Many people will recommend a doctor on sentiment just as quickly as they will on knowledge of his actual professional standing.

Doctors who are good mixers socially are working under the law of sentiment. They know in some way that they get patients by mixing with people. These very people with whom they associate may not come to them, but will recommend doctors because they are good fellows. Many who are "half-bakes" professionally, but good mixers, are greater successes than many doctors with much better professional ability. Sentiment is worth cultivating and can be used to good advantage.

Modern office helps such as the typewriter, good professional cards, and nice stationery, aid a doctor to obey

the law of sentiment, in addition to improving his professional standing.

Complete case report blanks and a bookkeeping system, well kept by a competent secretary, are a good investment for any doctor. A filing system to aid him to find what he wants is greatly to be desired. An up-to-date library with the best and latest professional books, properly filed in the best kind of bookcases, will aid greatly in office efficiency. All these things are expensive, but investment in them is on the side of economy when it comes to a choice of having them or doing without them.

9. *Inadequate Storage Space.*

Cabinets, closets, filing cases, etc., are office essentials which will aid much in keeping things put away and preventing untidiness. Have a place for the hanging of coats, hats, etc.

A great deal of material accumulates around an office that one should not throw away, such as magazines, manuscripts, extra supplies or stationery, cards, old case reports, clippings, and a great variety of things that one needs and wants more or less frequently. A proper storage place for this material is necessary in a well arranged office.

10. *No Uniform.*

The inefficient doctor does not wear a uniform, or if he does it is one that makes a poor impression. The modern doctor wears a white suit, a short apron, a white coat, or something that would immediately make him look the physician in the office to anyone casually looking in, even though there were many people around. White suits, white coats and aprons show very quickly that the doctor is particular about the cleanliness of his appearance. They have to be laundred frequently in order to keep them clean and tidy. Many doctors do not like the expense nor the effort required to keep immaculate. I have seen some who pretend to wear white coats but they would wear the coats until they were almost black. The white coat or apron should be changed every day as a rule, and more often if necessary. The extra expense and effort are worth all they cost and more to the doctor who expects to be more than a mediocre physician.

So much for equipment, and its bearing on expenses which isn't usually considered. This department is where so many doctors fall down. They think they will be economical, hence they do not properly equip themselves nor their office. This lack of equipment is much more expensive in the long run than the purchase of it. One who does not properly equip fails to see the dollar behind the dime.

Colleges

CHICAGO COLLEGE OF OSTEOPATHY

On March 3 Dr. Preston Bradley, of the People's Church of Chicago, paid us a visit and spoke to the students at general assembly. Dr. Bradley is a speaker whom everyone enjoys hearing, and we were delighted with his visit. Dr. Bradley chose as his subject "Chicago." His talk was most amusing, and at the same time it gave the students much food for thought.

Dr. Delaney, who is not content with two degrees of "Doctor" and is now studying for a third such degree at the University of Chicago, was with us on March 9. His talk at general assembly was on Michael Servetus and his original discovery of the circulation of the blood. Dr. Delaney is a brilliant student and a fine speaker, and he held the students' interest and attention. Dr. Delaney is to be one of the first internes appointed in the new great hospital of the University of Chicago Medical School.

The legislative contest in Illinois has occupied much of the time and thought of the osteopaths and osteopathic students of this college during the past few weeks. Dr. George H. Carpenter, president of our board of trustees, and Dr. B. F. Wells, the secretary, were at the college on March 16 and talked to the students about the campaign.

Examinations for the winter quarter are now on, and the students are registering for the spring quarter. No new students have been admitted this quarter, but the old ones are back with few exceptions. Dr. Ethel S. Ferguson has returned to her home in Paw Paw, Illinois, but promises to visit us frequently. Dr. P. S. Brown has also left and returned to his home in Alberta, Canada. A letter from him says that he feels he has gained a valuable insight into the methods of osteopathy during his weeks at the Chicago College, and that he feels he spent a most profitable time here.

V. V. FRYE.

DES MOINES STILL COLLEGE OF OSTEOPATHY

Mrs. Mary Elizabeth Halladay, better known to many of the students as Mother Halladay, passed away on March 1, at the home of her son, Dr. H. V. Halladay.

Mrs. Halladay was known and beloved to many osteopathic students, both in Kirksville, where she resided for many years, and in Des Moines, which was her home during the last years of her life. She was made an honorary member of the Delta Omega Sorority at Des Moines, in recognition of her association with the development of osteopathy and of her unfailing kindness to students, particularly girls.

Dr. Bertha Messerschmidt, of 1925 class, has presented the physical diagnosis department with a multiple Bowles type of stethoscope, which enables six students and the instructor to listen to the same patient at the same time.

KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY

Here's to the men and women in our profession who are big enough to stand up and say, "I am an osteopath, I believe in osteopathy, and I am going to do everything in my power to help the osteopathic profession." Of such a type are the instructors in the Kansas City College of Osteopathy and Surgery. Our instructors meet their classes regularly and cheerfully with no thought of remuneration from the school, but with the sole thought in mind that if what time they can spend with the students is going to help make bigger and better osteopaths, then they are more than repaid. Very often our instructors turn down chances to make good money in order to meet their classes. Talk about pioneering!

The instruction is good, too. It comes from men and women who are in the field now; men and women who are keeping up with the progress of the science; men and women who can teach us from the results of their own experience. The wonderful thing about it all is that we are taught straight osteopathy. There is no man on our teaching staff who is only about half over the fence on osteopathy; if he was he wouldn't be allowed to stay. However, we are given slants as to the other side of the fence, for who has a right to condemn that about which he knows nothing? As Doctor Styles says: "None is so blind as he who will not see." The students in this college are taught all the different aspects in the professional game. We are taught that the only way to play the game is to have absolute confidence in the thing we are trying to do and to play the game straight. As Walt Mason says, "If one is not supremely sure that what he has for sale makes all competitors look poor, his eloquence will fail." We are taught that it is far better to improve ourselves rather than pick out flaws in the medical man's practice.

We have more reason to be proud of our instructors, for has not our own Doctor Styles just returned from a trip to Chicago where he represented the Cantilever people in a debate regarding the rigid and flexible shanks for shoes, and didn't he give these hundreds of shoe men from all over the country more osteopathy regarding the foot than they had ever heard of before? And isn't he also writing a series of articles regarding the osteopathic lesion, how it works and operates, which many scientific men from all over the country are acclaiming to be one of the greatest osteopathic works ever written? Look at Doctor Margaret Jones, who has built up the obstetrical clinic until it is one of the largest for a school of this size in the United States. We have members in the senior class who have already handled as high as thirty cases alone. Is it any wonder then that we feel that this college is "doing things," and that it has rightly been given the name of The Aggressive College?

C. A. KINKAID.

KIRKSVILLE COLLEGE OF OSTEOPATHY AND SURGERY

A public dance was held on Friday, March 11, in aid of the Scholarship Fund. More than 700 students and townsfolk gathered in the gymnasium for what proved to be a success, both financially and socially.

The proceeds from the dance, says the *Stilletto* of March 18, now total $1,103.56, of which $188 was contributed by business people of Kirksville. The remaining $915 came from the college, which is a tangible evidence of the enthusiasm and energy being put into the drive to give the Scholarship Fund a substantial start.

PHILADELPHIA COLLEGE OF OSTEOPATHY

Faculty members are still active on programs of various osteopathic associations. Dr. Paul T. Lloyd, in charge of our x-ray department this year, will discuss his work at the next meeting of the Toronto Osteopathic Association, and on May 18 and 19 Dr. J. Ivan Dufur will address the Ohio State Osteopathic Society.

At the meeting of the Philadelphia County Osteopathic Society March 16, Dr. Dufur spoke on "Diagnostic Survey of Nervous and Mental Diseases." On the same occasion Dr. Foster C. True, formerly a member of the New Hampshire State Hospital, gave an address on "History of Institutional Care of the Insane."

Arrangements having been made by Dr. Dufur, head of four departments of neurology and psychiatry, the senior class went in a body to the Norristown State Hospital for the Insane. Here they saw 3,100 insane patients, and every courtesy was shown them by hospital officials in the three hours they spent in visiting the various wards and padded cells in the institution.

Emphasis is also being placed on more practical work at the college. New models and anatomical specimens have been purchased for the departments of anatomy and physiology. In addition, we have just received a gift of two clever paintings on black oilcloth. One is an anterior view of the human skeleton, the other a posterior view, and they are used in connection with freshman lectures in anatomy. These paintings represent the original work of Dr. George Nelis, '27.

On March 27 Dr. Jerome M. Watters, eye, ear, nose and throat specialist, of Newark, N. J., made an inspiring address to the student body.

We are always glad to hear from members in the field. We have just learned that Dr. Robert E. Cole, '24, became associated early in March with Dr. A. D. Heist of Geneva, N. Y., and plans are being made to develop a private osteopathic hospital.

Dr. Wilbur P. Lutz, who has been associated with the work of our college and hospital since his graduation in 1925, was married on April 2 to Miss Alice M. Wister of Philadelphia.

Our latest contributions to the college library are several textbooks from Mr. Obert Emanuel of the class of '29.

Social activities are again in full sway. On March 12 the Iota Tau Sigma held its annual banquet at the Hotel Adelphia. The Neurone Society gave a dance in College Hall on March 18. The formal dance of the Atlas Club will be given at the Cedar Brook Country Club on April 28, and around the same time the Phi Sigma Gamma will give its annual banquet. The Axis had an auction sale on March 19 at the home of Dr. Ruth Winant, and the members are now looking forward to an evening at "The Lilacs," where there will be a birthday celebration in honor of Dr. Henry Windsor, a former member of the faculty.

On April 8 and 9 the college will have a booth at the Eastern Osteopathic Convention at the Waldorf-Astoria Hotel, New York, and we expect to be similarly represented at the Pennsylvania State Osteopathic Convention, to be held in Harrisburg, Pa., early in May. Members of the profession are invited to have prospective students call at the booth for full particulars regarding college entrance.

HELEN RAMSAY.

Book Notices

ELEMENTS OF HYGIENE AND PUBLIC HEALTH. By Charles Porter, M.D., B.Sc., M.R.C.P. Second Edition. Cloth, Pp. 425, with 98 illustrations. Price $4.50. London and New York: Oxford University Press.

Those who are making talks before clubs and organizations on health and hygiene will find much practical information in this book.

WHO'S WHO

There are some doctors in the Chicago "Who's Who,' and we understand in other cities' "Who's Who," but we do not exactly know how many of our osteopathic physicians may be found in the American "Who's Who." We just learned, however, that one of our California doctors, Dr. Gwladys M. Morgan, has been honored.

One of the things that has given her favorable prominence in the literary world is the authorship of a 100-page book entitled, "Our Little Welsh Cousin." This is one of the "Little Cousins Series," published by L. C. Page and Company of Boston.

A short time ago Dr. Morgan made her second visit to the old home district in Wales, where she secured a generous amount of interesting data, together with original pictures and maps, which make this story one of the most delightful and fascinating issued in this series. The purpose is to make young Americans better acquainted with their little Welsh cousins across the water. The idea is beautifully carried out through storm and sunshine, working in many quaint and happy situations that are typical of the children of that country. This book is dedicated to "My two Welsh nephews, David Morgan Elliott and Paul Victor Morgan, Jr."

We understand this is but the first of a number of books from the same author, which will be anticipated with interest.

WHAT TO EAT AND HOW TO PREPARE IT

This is a 190-page book, based on the principles of diet laid down by Alfred W. McCann in "The Science of Eating," by Elizabeth A. Monaghan, published by George H. Doran Company, New York, with a preface by Sarah Gertrude Banks, M.D.

The right food for the right people. Do you serve the great American meal, meat, bread and potatoes for dinner? Then you are feeding yourself and your family entirely on acids. Do you know which foods neutralize acids?

Here is a simple and most practical book on the method of choosing your meals and the way to cook them, so that none of the nutritive elements are wasted. Miss Monaghan explains the few basic rules of a balanced diet, provides varying menus, recipes and special diets for special cases. She devotes a chapter to the case of those of us who must eat in restaurants, a chapter to the girl who works, a chapter on weight control, a chapter on children.

Health and ill health depend on what you eat. Intelligent use of the practical advice given in this book will give you and your family the incalculable advantage of physical fitness.

THE TREATMENT OF THE ACUTE ABDOMEN. OPERATIVE AND POSTOPERATIVE

This is a 237-page book by Dr. Zachary Cope, published by Oxford Medical Publications. It is well illustrated and carefully indexed. The preface reads: "This book is a companion and complement to The Early Diagnosis of the Acute Abdomen. It is meant primarily to help those doctors who are not much practised in abdominal surgery, but who may be called in an emergency to operate upon an acute abdominal condition . . . The methods described in the book are those which the writer has found to be the safest, and in most cases the simplest. . . . After treatment of operations has been described in detail, for this part of abdominal work is very often neglected in the textbooks. Every acute abdominal case needs the utmost care in treatment after operation, and since the responsibility frequently rests with the general practitioner to carry out this treatment, no detail as to diet, dressing, or general management has been thought to be insignificant."

"COOL OFF AND BRUSH UP" IN DENVER THIS SUMMER

The Thirteenth Annual Postgraduate Course of Denver Polyclinic and Postgraduate College

Chartered by the State of Colorado

Dr. C. C. REID, President — Dr. R. R. DANIELS, Sec.-Treas.

AND

The Postgraduate Course of the A. O. A.

Following the National Convention at Denver

The American Osteopathic Association and The Denver Polyclinic and Postgraduate College will this year combine their courses and give, just following the National Convention, the best Postgraduate course yet offered to the profession.

Two Weeks: August 1 to 13, Inclusive, 1927 — Eight Courses in One

1. THE EFFICIENCY COURSE, by Dr. C. C. Reid. This course is well known to the osteopathic world. It includes professional work, also the business and personal side of practice. Over 500 D. Os. have taken this course and are enthusiastic about it. Has filled a long-felt want in the profession. Nothing like it has been offered before.

2. THE FOOD COURSE, by Dr. R. R. Daniels. He discusses the matter of food on a strictly scientific basis, teaching how to use effectively this most valuable adjunct in varied conditions met every day. Practical work in nutrition.

4. OSTEOPATHIC TECHNIC.

The latest methods, by two of our best technicians.

Dr. D. L. Clark will give his new work which he recently presented before the schools.

Dr. C. J. Gaddis will demonstrate his excellent bedside technic.

5. ORIFICIAL COURSE, including Ambulant Proctology, by Dr. F. I. Furry. Many have paid for this course more than the cost of the combined courses. No physician can neglect this branch of practice.

3. THE DIAGNOSIS COURSE

A Plan for General Examination, with blanks. Dr. R. R. Daniels.
A Review of the Examination of the Chest. Dr. A. D. Becker.
Abdominal and Surgical Diagnosis, including the viscerosomatic reflexes. Dr. W. Curtis Brigham.
Diagnosis of the Eye, Ear, Nose and Throat. Dr. C. C. Reid.

6. SPECIAL REVIEW COURSE, on the Eye, Ear, Nose and Throat, by Dr. C. C. Reid. This course is designed for the general practitioner, and covers thoroughly the ground in diagnosis and treatment.

7. THE MOUTH, ITS INFECTIONS AND CARE. Teeth and Gums, by Dr. L. Glenn Cody. Oral Surgery, by Dr. Menefee Howard.

8. OFFICE TECHNIC, MINOR SURGERY AND GYNECOLOGY, by Dr. H. A. Fenner, who will give a practical demonstration in the care of minor injuries, sterilization, preparation of dressings and varied office technic. He will also demonstrate the practical points of diagnosis and treatment of gynecological conditions.

Special Features

In addition to our regular course, a number of extra features are always given. This year Dr. D. L. Clark will give his improved foot treatment. Dr. Fannie E. Carpenter is to give a short course on public speaking. Dr. E. H. Cosner will give several lectures on efficiency. Dr. Stanley M. Hunter will demonstrate special work on the eye. Other special features will be added.

The Combined Course this year, with all the special features included, is to be given for one fee. Students will receive a diploma at the conclusion.

The Combined Course is distinctive because it is entirely practical, given by practical men of wide experience, and filled with work that you can apply every day.

Every osteopathic physician should have one postgraduate course each year, to review his old work and to get new material.

Register for the Course now. The class is limited. Apply to Dr. R. R. Daniels, Secretary, Clinical Building, 1550 Lincoln St., Denver, Colo.

LAST SUMMER DENVER ENTERTAINED 500,000 TOURISTS

Physiotherapy

HERMAN E. BECKWITH, B.A.,D.O.
Los Angeles, Calif.
Professor of Radiology and Physiotherapy in the Los Angeles College of Osteopathic Physicians and Surgeons

Article IV

PHYSIOLOGY OF THE DIRECT CURRENT

Successful therapy, as far as the galvanic current is concerned, depends upon the wise use of it, with due consideration for the various polar actions. This applies to both general and local uses of the current. For this reason, and in order to make it plain to the reader, we shall tabulate, as it were, the different polar effects of the direct current.

POSITIVE POLAR ACTION

Physiological—
- Sedative
- Vasoconstrictor

Chemical—
- Accumulation of oxygen
- Acid in reaction
- Tissues are hardened by the coagulating effect of the acid.
- Dehydrating effect on tissues.
- Eschar is hard, small, dry and noncontractile.

Cataphoretic—
- Metallic ions as copper, zinc, mercury, etc.
- Alkaloids.
- Thiosinamin
- Cocain

Other Effects—
- Bactericidal
- Denutritive
- Used in acute conditions; decreases local heat
- Produces anemia (rob hypertrophy)

NEGATIVE POLAR ACTION

Physiological—
- Irritative
- Vasodilator

Chemical—
- Accumulation of hydrogen
- Alkaline in reaction
- Tissues are liquified and destroyed by caustic alkali
- Infiltrating effect on tissues
- Eschar is large, retractile, soft and pink in color

Anaphoretic—
- Ions of halogens
- Chlorine
- Iodine

Other Effects
- Non-bactericidal
- Nutritive (in mild currents)
- Denutritive (in strong currents)
- Used in chronic conditions increases local heat.
- Produces hyperemia (feed atrophy)
- Tends to dissolve scar tissue

The general physiological effects of the passage of a current of electricity through the body may be outlined somewhat as follows. (Of course this applies only when the current is of such strength as to be of service in a therapeutic sense.)

CATALYTIC ACTION (GENERAL)

Causes accelerated flow of blood and lymph; which, in turn,

hastens waste removal;
replaces a loss with fresh deposits of pabulum;
aids removal of deposits, effusions, etc.;
nourishes atrophy and wasting diseases;
reëstablishes normal thermic equilibrium;
warms cold parts and cools the warm;
stimulates gland secretions.

Catalysis, in a purely therapeutic sense, is a physiological process which depends upon some outside stimuli. As Dorland defines it, "A changing of the velocity of a reaction produced by the mere presence of a substance which does not itself enter into the reaction." Therefore, any chemical, physiological and nutritional effects or reactions that are produced by the passage of an electric current are catalytic effects.

Realizing how universal and how far-reaching this catalytic action extends, and also the polarity effects of the various modes of electrical current, it is easy to understand that successful physiotherapy must depend upon a thorough knowledge of the technic in application of all of the various electrical modalities. There follows, to some degree, either benefit or harm, good or bad, upon every application of an electrical current.

Through catalytic action the nutrition is directly and indirectly, locally and generally affected. Through catalytic action the stimulation, sedation, temperature, growth and function of every part of the body can be more or less accurately controlled through the vasomotor nerve supply to that part, thus controlling the circulation.

Referring to the above outline we see that all positive applications of the direct current will produce sedation. This mode can be used very effectively to relieve pain and inflammation. I have succeeded in relaxing a lower lumbar area sufficiently to obtain a correction, and this in cases where a 1,500 watt therapeutic lamp would not be effective enough to get such a relaxation.

The accelerated flow of blood and lymph which is caused by the passage of an electrical current will, by osmosis, hasten the removal of waste products, and at the same time it will replace the loss with fresh material. Increasing the flow also has been a decided thermic effect, cooling hot parts and warming the cold by the reestablishing of the normal equilibrium of blood flow. This increased flow will also help to remove deposits, hypertrophies and effusions, and on the other hand, it will tend to nourish and feed atrophied and wasted conditions.

Someone has said that "it is through the process of nutrition that the majority of chronic diseases are cured." There is probably no chronic disease that is treated where it is not possible to trace at least part of the good results following to the effects on nutrition.

The secretion of the various glands of the body, the salivary, the stomach, liver, kidney, and the various ductless glands can all be greatly increased by the proper electrical treatment.

However, electricity is a docile and willing servant when properly handled, but it is a stubborn and unyielding master when ordered to act contrary to certain fixed rules. In its different manifestations it is unexcelled in some things; in many things it is not as good as other methods. It is not a cure-all. It does come as near being a "universal helper" as anything we have at our command.

IONIZATION

In a previous article the process of breaking up a solution of some salt was illustrated. This process is called *electrolysis*. Also, the experiment with the piece of beef muscle illustrated the phenomena of ionization which is a product of electrolysis. When the movement of ions into the tissues, as illustrated by the copper wire and the beef muscle experiment, is concerned, we speak of it as Ionic Medication, or Metallic Ionization.

When ions of some metal or metallic salt are forced into the tissues they come into contact with other ions and thus new salts are formed. If these salts are soluble they are picked up and carried away in the blood stream, but when they are insoluble they are deposited in the tissues.

When using various solutions for the purpose of ionization the ions sometimes become very irritating. This irritation is lessened by making the solutions isotonic by the addition of glycerin.

Zinc sulphate ..... 75 grains
Glycerin ..... 2 ounces
Water ..... 35 ounces
Dilute with an equal quantity of water when using.

Copper sulphate—(Use the same formula as above, using the copper salt instead of the zinc.)

Sodium chlorid ..... 175 grains
Water ..... 1 pint
Dilute with equal quantity of water just before using.

Sodium salicylate—(Use the same solution strength as for sodium chlorid.)

When using these solutions for therapeutic work it is well to have the active electrode which is to be wet

with the above kept just for that case. In emergency one can use just a towel soaked in these solutions under a regular electrode. It is never necessary to use a solution that is stronger than 2%—a 1% solution is all that is commonly used.

In the way of preparation for ionization treatments it is necessary to cleanse the skin with soap and water, and for the best results follow this washing with alcohol or ether. Cover any abrasions with a piece of adhesive tape or with collodion.

GENERAL INSTRUCTIONS AND PRECAUTIONS IN TECHNIC

Be sure that the apparatus which you desire to use is in good working order and that all connections are tight. When using the galvanic form of current test your polarity now and then.

Electrodes should be well made and of a proper size to get the results desired. In using wet pads be sure that the pad is wet throughout and yet not wet enough to allow the water to run all over your patient. Dry pads or those not sufficiently soaked have a great deal of resistance and the patient will not get what you intended.

The meter is a good thing to watch (it gives one a very definite idea as to the amount of current passing), but we cannot treat by meter alone. The patient's feelings are of much greater importance. "Every patient is not a case but an individual."

Patients coming for the first time are generally very nervous concerning electrical treatments. They always have some friend who has been shocked or burned, etc. The first treatment should always be given very gently, and the confidence of the patient won. Turn on the current slowly and do not try to give a large amount. It is better to give it weaker and make up for the deficiency by increasing the time of treatment.

If the patient complains of some stinging sensation or annoying sensation, turn off the current and investigate. The pads may be too dry, or there may be a little abrasion, or perhaps a loose connection.

In treatments involving the neck or head, use light currents and increase and decrease their strength gradually. Do not just pull the switch and thus cause a sharp break. If you do this, your patient might show signs of vertigo, etc.

In therapy a mild dose for a long time will often get better results than a strong dose for a short time. And it is also very much more pleasing to your patient.

With this paper we have finished the preliminary explanations that are necessary to serve as a foundation for some practical therapy. The next article will take up some of the more practical phases of the subject of galvanization, before taking up the physics and physiology of any of the other modes.

QUESTIONS AND ANSWERS

Question: What is copper phoresis for hemorrhoids and where can I find description of it?

Answer: Copper phoresis is an electrical treatment of hemorrhoids with a copper electrode. It causes a lot of soreness, is applicable to internal hemorrhoids only, and is not as good as other methods now very popular.

S. V. R.

Answer: Copper phoresis is a form of treatment whereby ions of copper salts are driven off into the tissues from a copper electrode. A galvanic current is used and the copper electrode must be connected with the positive pole for the treatment. The negative pole goes to a pad which may be placed anywhere. I prefer to place it over the liver area and thus secure a liver stimulation which is always indicated in these cases.

Do not use too strong a current until, by experience, you can tell about what reaction the patient is going to have. Treat for say ten minutes at first.

The experiment in the March Journal demonstrated this treatment, and more detail will follow in the next number.

H. E. B.

State and Divisional News

OSTEOPATHIC CONVENTIONS

ANNOUNCEMENTS

American Osteopathic Association, thirty-first annual convention, Denver, July 25-29.

Central States, Wichita, Kansas, May 4-6.

Florida state convention, Miami, May 12-14.

Georgia and South Carolina joint convention, Augusta, Ga., May 9, 10.

Illinois state convention, Rockford, April 25-27.

Iowa state convention, Des Moines, May 26-28.

Kansas state convention, Topeka, October 5, 6.

Minnesota state convention, St. Paul, May 13, 14.

Nebraska state convention, Scottsbluff, September 28-30.

New England, Worcester, Mass., May 13, 14.

New York state convention, Schenectady, October 28, 29.

Oklahoma state convention, Oklahoma City, June 22, 23.

South Carolina. (See Georgia.)

Tennessee state convention, Memphis, postponed because of floods.

Washington state convention, Seattle, June 25-27.

Wisconsin state convention, Milwaukee, May 12, 13.

CALIFORNIA

Citrus Belt Osteopathic Society

The March meeting was held on the 11th in Ontario. Dr. Norman Sprague of Los Angeles Osteopathic Hospital spoke on "Diagnosis."

Los Angeles Osteopathic Society

The March meeting was held on the 14th. The program as published in advance was as follows:

"Method of Manufacture and Control of Insulin," Ewart S. Miller, Ph. D.; "Sugar Tolerance and Kidney Function in Diabetes," Lorenzo D. Whiting; "Butterflies," illustrated, John Adams Comstock.

Pasadena Osteopathic Society

Dr. Dain L. Tasker gave an address on "The Acute Abdomen" at the meeting on March 3. Dr. J. S. White, chairman of the legislative committee, read a list of recommendations of candidates for the coming city election.

San Diego County

The San Diego County Osteopathic Association held its monthly meeting Friday evening, March 4, at the home of Dr. Anna M. Smock and Dr. Anna S. Davis, 1166 24th street. Dr. E. J. Shackleford had charge of an interesting program. Dr. Gwladys Morgan, eye, ear and nose specialist, gave a detailed report of her recent postgraduate work in eye, ear and nose. The report was followed by discussion.

COLORADO

Northern Colorado Osteopathic Society

The March meeting was held on the 16th at Boulder with Dr. C. C. Reid of Denver as the principal speaker.

FLORIDA

Dade County Osteopathic Society

A meeting was held March 1 in the office of the president, Dr. C. A. McKinley. After a discussion regarding advertising in the telephone directory, a committee was appointed to draft rules governing the matter, consisting of Drs. G. H. White, William D. Sigler and R. B. Ferguson. Dr. Crutchfield, chairman of the state convention program committee outlined his plans. The local Ladies' Auxiliary is actively preparing for the entertainment of the visitors.—L. E. Gingerich, D.O., Secretary.

Orange County Osteopathic Society

Dr. John Peacock, Jr., Providence, R. I., addressed the March meeting at Orlando on the 4th. He spoke on ethics and national legislation.

Palm Beach County Osteopathic Society

Dr. George V. Webster recently addressed the Palm Beach County society on the subject of osteopathic re-

search. New officers were installed as follows: President, Dr. C. E. Dove; vice-president, Dr. R. T. Quick; secretary-treasurer, Dr. Lurah Rader, all of West Palm Beach.

Tampa

Dr. George V. Webster, Carthage, N. Y., was guest of honor on March 10 at a dinner given the osteopathic physicians in Tampa by Drs. Lecta Fay Kinney and Mina G. Rafferty. Dr. Webster gave an address.

GEORGIA

The state meeting will be held in Augusta on May 9 and 10 instead of April 22 and 23 as previously announced. The South Carolina society will meet at the same time and place. Dr. Hoyt B. Trimble, president of the Georgia society, says that Dr. George M. Laughlin will be the principal speaker, but that there will be a number of others with short instructive papers. Drs. Davis and Dawson of Augusta are planning on making this the greatest convention ever held in Georgia.

ILLINOIS

Illinois State Association

The twenty-eighth annual convention will be held in the Christian Union Church, Rockford, April 25, 26, 27, 1927.

PROGRAM

Monday, April 25

MORNING

Formal Opening of Convention.
Address of Welcome—
Response—
President's Address—Dr. Hal W. Shain, Chicago.
Short Business Session.
Preliminary Report of Secretary—Dr. E. C. Andrews, Ottawa.
Appointment of Committees.
Announcements, etc.
Technic—Dr. W. A. Schwab, Chicago.
Luncheon
Round Table Discussion of Legislative Matters—Dr. C. O. Casey, Decatur, chairman.

AFTERNOON

Section on Eye, Ear, Nose, Throat—Dr. J. Deason, Chicago, chairman.
Eye—Dr. Lennon, Portage, Wisconsin.
Ear—Dr. McDaniels, Watseka, Illinois.
Throat—Dr. John Peck, Kankakee, Illinois.
Nose—Dr. Deason, Chicago, Illinois.
Discussion.
Technic—Dr. W. A. Schwab, Chicago, chairman.
Clinics: General Clinics.
Eye, Ear, Nose, Throat Clinics, Dr. Deason, chairman.

EVENING

Section on Roentgen Ray, Electrotherapy, Laboratory Diagnosis, Dr. E. R. Hoskins, Chicago, chairman.
Discussion.

Tuesday, April 26

MORNING

Business Session of I. O. A.
Nervous and Mental Diseases—Dr. A. G. Hildreth, Superintendent and Chief Physician, Still-Hildreth Sanitarium, Macon, Missouri.
Osteopathy's Needs in Illinois—Dr. George M. Laughlin, President and Chief Surgeon, Kirksville College of Osteopathy and Surgery, Kirksville, Missouri.
Foot Technic, "Correcting Arch Troubles"—Dr. C. J. Gaddis, Secretary, American Osteopathic Association, Chicago.
All Visiting Kiwanians Lunch with All-Rockford Kiwanis Club—Speaker, Dr. George M. Laughlin.

AFTERNOON

Diagnosis—Heart and Lungs—Dr. S. V. Robuck, Chicago.
Orthopedic Clinics and Diagnosis—Dr. George M. Laughlin.
Gynecology Section—Dr. H. L. Collins, Chicago.
Heart and Lung and General Clinics.

EVENING

Banquet—Unity Hall, Christian Union Church.

Wednesday, April 27

MORNING

Obstetrics and Osteopathic Care of Expectant Mothers.
Diet in Health and Acute Diseases—Dr. George W. MacGregor, Chicago.
Diagnosis of Surgical Abdomen—Dr. George J. Conley, President, Kansas City College of Osteopathy and Surgery; Chief Surgeon, Lakeside Osteopathic Hospital, Kansas City, Mo.

AFTERNOON

Lecture—Dr. Ray Gilmour, President, American Osteopathic Association, Sioux City, Iowa.
General Diagnosis.
Unfinished Business, I. O. A.
WILL O. MEDARIS, *Chairman Program Committee.*

Chicago—City Society

There was a large crowd at the dinner given in the Hamilton Club on February 3, addressed by Senator Mason and others interested in the legislative campaign.

The March meeting was held on the 3rd and was addressed by Mr. V. C. Michels, superintendent of the state department of registration and education, and by Dr. E. C. Andrews, Ottawa, secretary of the state society.

Chicago—North Shore Society

The North Shore Osteopathic Society was organized on March 4, with the following officers: President, Douglas D. Waitley, Evanston; vice president, Odin Andres, Winnetka; trustees: E. T. Schildberg, Winnetka; James M. Fraser, Evanston; Hal W. Shain, Rogers Park; W. Burr Allen, Evanston; Arthur H. Tuttle, Wilmette.

The secretary and treasurer were to be appointed later by the trustees. Meetings are held the first and third Fridays of each month at noon.

Chicago—West Side Osteopathic Physicians

The second meeting in March was held on the 31st at the Oak Park Y. M. C. A. Dr. Russell Peckham of the Chicago College of Osteopathy gave a most interesting discussion and demonstration of the principles and practice of lumbar and sacro-iliac technic.

INDIANA

Dr. E. O. Peterson, La Porte, new president of the Indiana Society, is seeing to it that the chairmen of the various bureaus in the organization write to the Central office for suggestions to make their year's work count for the most.

He is also sending printed cards each month to every osteopathic physician in the state. One of these reads:

"Cooperation for osteopathy and ourselves.

"Doctor: Listen and think!

1. "You should pay your state and national dues.
2. "You should sell at least one student a year to osteopathy.
3. "You should be present at your next state meeting and also bring your neighbor—licensed or unlicensed.
4. "Let's get out of this selfish rut.

"You should do legitimate advertising for yourself and osteopathy. You have nothing to lose and all to gain by complying with the above four statements."

KANSAS

State Society

The State meeting will be held in Topeka on October 5 and 6. This is to correct a statement published in the March Journal.

Cowley County

A meeting was held in Winfield February 24. After a visit to the Newton Memorial hospital there was a business meeting in the office of Dr. Nellie L. Hollowell and addresses by Dr. W. A. Laird on "Blood Examinations" and by Dr. J. B. Strother on "Rib Lesions."

Verdigris Valley Osteopathic Association

Dr. Wayne M. Weaver reports that the March meeting was held in the office of Dr. Blandin Smith, Inde-

Why the Agar?

Agar agar as used in Petrolagar is there not for bulk but as an ***emulsifying agent.***

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It does not ferment.

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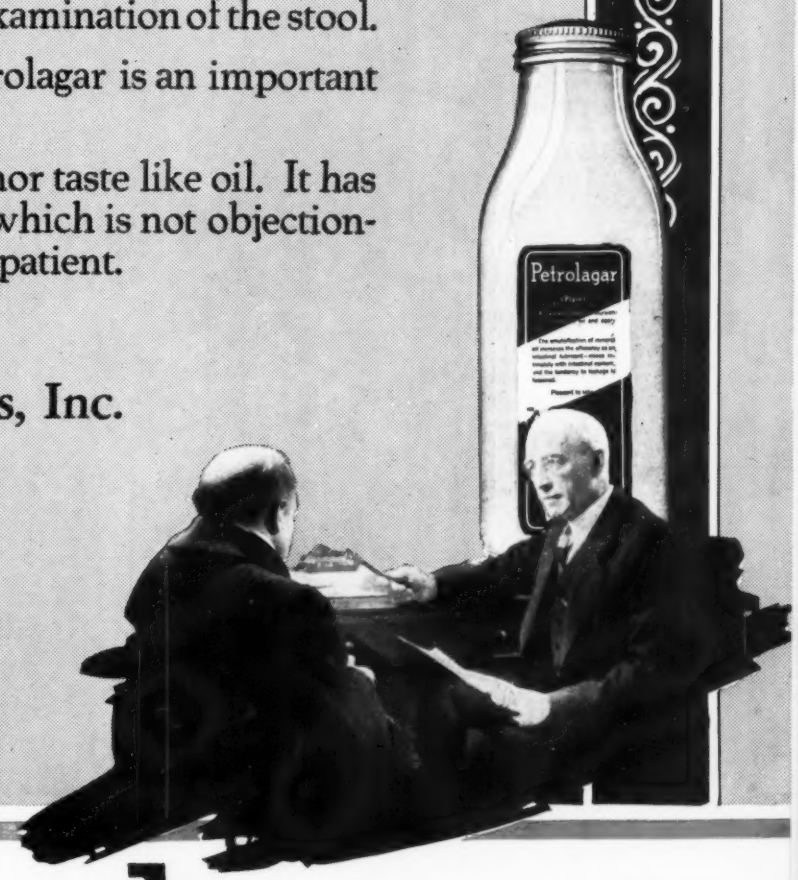

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The emulsification of mineral oil increases the efficiency as an intestinal lubricant—mixes intimately with intestinal content, and the tendency to leakage is lessened
Pleasant to take
DIRECTIONS

Petrolagar

pendence, on the first. After a short business meeting there were talks with discussions: Dr. J. R. Harris, "Obstetrics, with the Report of a Case"; Dr. J. C. Logsdon, "Eczema," and Dr. Louis Adams, "Gastroenteroptosis."

Wichita Osteopathic Society

A meeting was held at the Southwestern Osteopathic Sanitarium on March 12. The principal speaker was the Rev. Fred Condit of El Dorado, whose subject was, "Unity and Harmony in the Profession." Dr. P. W. Gibson, Winfield, told of the coming Central States convention and Dr. A. Tedrick of the hospital staff gave a talk and demonstration on the x-ray examination of the stomach and intestinal tract.

CENTRAL STATES

TENTATIVE CONVENTION PROGRAM

Broadway Hotel, Wichita, Kansas, May 4, 5, 6, 1927.

Wednesday, May 4

MORNING

Registration.

Dr. J. H. Styles, Jr., Kansas City College, Kansas City, Missouri.

Dr. J. D. Edwards, St. Louis, Missouri—"Osteopathic Finger Surgery for the General Practitioner."

AFTERNOON

President's Address—Dr. R. B. Gilmour, Sioux City, Iowa.

Address of Welcome—Mayor of Wichita.

Response by Dr. W. S. Childs, Salina, Kansas.

Dr. C. J. Gaddis, A. O. A. Secretary, Chicago—"Professional Problems."

Dr. J. A. Tedrick, Wichita (Southwestern Osteopathic Hospital)—"Differential Diagnosis of Bone Tumors by Roentgen Ray."

Dr. Mabel Anderson, Kansas City, Mo. (Lakeside Hospital)—"Shellburg System of Colonic Irrigation."

Dr. J. H. Styles, Jr.—"Osteopathic Technic."

State Sectional Meeting.

Thursday, May 5

MORNING

Clinic at Southwestern Osteopathic Hospital by Drs. J. D. Edwards, E. C. Brann, H. C. Wallace, L. S. Larimore, George M. Laughlin, George J. Conley, A. C. Hardy, T O. Pierce.

Dr. C. J. Gaddis, Chicago—"Osteopathic Technic."

Dr. George M. Laughlin, Kirksville—"Osteopathic Policies."

Dr. W. S. Childs, Salina, Kans.—"Office Efficiency."

Dr. M. S. Slaughter, Webb City, Mo.—"Osteopathy."

AFTERNOON

Dr. Rolla Hook, Logan, Ia.—"Obstetrics."

Dr. L. S. Larimore, Kansas City—"Nasal Respiratory Function in Relation to Systemic Disease."

Dr. George J. Conley, Kansas City—"Surgery."

Dr. W. S. Corbin, Chickasha, Okla.—"Heart Lesions and Their Diagnosis."

Dr. E. Claude Smith, Topeka, Kans. — "Colon Therapy."

Sight-seeing trip by Chamber of Commerce and visit to Osteopathic Hospital.

Banquet.

Friday, May 6

MORNING

Clinics at Hospital.

Dr. Robert Bachman, Des Moines, Ia.—"Obstetrics."

Dr. T. O. Pierce, St. Joe, Mo.—"The Necessity of Surgical Diagnosis in General Practice."

Dr. A. G. Hildreth, Macon, Mo. — "Osteopathic Growth and Development."

Dr. A. W. Clow, Washington, Ia.—"Osteopathic Publicity."

Dr. B. L. Gleason, Larned, Kans.—"Hospitals."

AFTERNOON

Dr. Dain L. Tasker, Los Angeles, College of Osteopathic Physicians and Surgeons. (Subject to be announced.)

Dr. A. C. Hardy, Kirksville, Mo.—"Acute Disease of Nose and Throat."

Dr. Robert Bachman, Des Moines, Ia.—"Gynecology."

Dr. J. H. Styles, Jr., Kansas City—"Osteopathic Technic."

KENTUCKY

Jefferson County Osteopathic Society

Dr. A. B. Johnson was the principal speaker at the meeting on March 8, the subject being "Backache." The paper was discussed by Drs. H. H. Carter, J. O. Day and S. G. Bandeen.

MAINE

Eastern Maine Osteopathic Society

A meeting was held at the home of Drs. W. E. and M. Gifford of Bangor on March 11. An interesting case was examined and discussed and plans formulated for the observance of Normal Spine week. This is a new organization which meets twice a month. It includes ten physicians from four or five towns. The secretary is Dr. R. L. Wooster, Bangor. The president, as reported last month, is Dr. C. B. Doren.

State Association

The Maine Osteopathic Association held its midwinter meeting in Portland. Following the business meeting, a very interesting program was enjoyed by about thirty members. The following were on the program: Dr. Albert E. Chittenden, Auburn, Dr. G. C. Shibles, Westbrook, Dr. Louise Jones, Portland, and Dr. S. T. Rosebrook, Portland.

The Maine Association is planning to place a bill before the Main Legislature for the right to practice obstetrics.

The next regular meeting will be held in Portland in June.

MYRON G. LADD, Secretary.

MASSACHUSETTS

Boston

The March meeting was held on the 19th, addressed by Dr. Owen B. Ames on "Mental Surgery, Bloodless but Not Painless," and by Dr. Henry James Broughton, president of the Boston Dietetic Club, on "The Physiology of Digestion."

Connecticut Valley Osteopathic Association

A meeting was held on March 8 at the office of Dr. Norman B. Atty, Springfield. Dr. Ward C. Bryant, Greenfield, spoke on the subject, "Efficiency in Technic."

MICHIGAN

Flint Osteopathic Society

A meeting was held on March 16 with Dr. C. E. Williams who spoke on "Acute Indigestion." Dr. J. H. Laird was the speaker on March 30.

Lansing Osteopathic Association

A meeting of the Lansing Osteopathic Association was held the second Wednesday in February. The following officers were elected: President, Dr. V. C. Symmonds; vice president, Dr. A. J. Kling; secretary, Dr. F. Hoyt Taylor; treasurer, Dr. E. A. Seelye; executive committee, Drs. V. E. LeRoy, Acelia Leach and L. J. Green; publicity director, Dr. F. Hoyt Taylor; entertainment, Dr. L. J. Green.

The Lansing Association entertained the South Central Michigan Osteopathic Association on March 17.

The meeting started with a banquet. Dr. Symmonds then delivered a fitting speech of welcome, and turned the meeting over to Dr. F. Hoyt Taylor who presided. Dr. Paul Morgan of Battle Creek gave a very fine talk on "Diagnosis" and was followed by Dr. J. J. Neumann, who spoke on "Obstetrics."

Both talks were followed by discussions, which have been one of the main features of these meetings. Later a spirited discussion regarding legislation took place. There were sixty-four in attendance.

F. HOYT TAYLOR.

State Association

The name of the Michigan State Osteopathic Association has been changed to the Society of Michigan Osteopathic Physicians and Surgeons.

MISSOURI

Cape County Osteopathic Association

Dr. M. Marguerite Fuller, secretary, reports that at the meeting on March 7, Dr. Anita E. Bohnsack presented a discussion of case report reviews, choosing what she felt was her most strictly osteopathic accomplishment.

The Cape County people are securing the newspaper publication of brief accounts of their meetings, followed with a paragraph or two of strictly osteopathic material.

Central Missouri Osteopathic Association

A meeting was held in Mexico on March 7. Drs. A. C. Hardy and C. B. Miesch of the Kirksville College of Osteopathy and Surgery had a number of operations and examinations at the Audrain County Hospital. These two doctors also addressed the meeting. Officers were elected as follows: President, Dr. Ralph E. Lindsey, Auxvasse; first vice president, Dr. L. B. Lake, Jefferson City; second vice president, Dr. R. B. Baize, Laddonia; secretary-treasurer, Dr. W. T. Hardy, Columbia.

Southwestern Missouri Osteopathic Association

A meeting was held in Carthage March 16 with the following addresses: Dr. M. R. Maxwell, Mount Vernon, "The Relation of Dentist and Physician"; Dr. W. B. Pingree, Carthage, "The Relation of Optometrist and Physician"; Mr. Roscoe Brooks, Joplin, "The Importance of Insurance Examinations"; Dr. Mary Snyder, Carthage, "Osteopathy."

Officers were elected as follows:

President, Dr. M. R. Maxwell, Mount Vernon; vice president, Dr. George W. Cox, Webb City; secretary-treasurer, Dr. Mildred Copeland, Joplin.

There were about thirty in attendance from eleven towns. The next regular meeting will be held in Neosho May 18.

A. B. Wheeler, Secretary.

NEBRASKA

Lincoln Association of Osteopathic Physicians

The March meeting was held on the 10th, with talks by Drs. Charles A. Blanchard and E. H. Frech.

NEW JERSEY

State Society

The meeting was held in East Orange on March 5, presided over by Dr. H. T. Maxwell, Morristown. The program was as follows:

Dr. Ray F. English, Newark—"Diagnosis and Pathology from an Osteopathic Viewpoint."

Dr. Harry L. Chiles, Orange—"Osteopathy, the Lengthened Shadow of Doctor Still."

Atlantic County Osteopathic Society

In a meeting held in February, officers were elected as follows: President, Dr. Eleanore M. Arthur; vice president, Dr. Maude F. Barger; secretary, Dr. James F Logue; treasurer, Dr. W. Millwood Conger.

NEW YORK

Hudson River North Society

A meeting was held on March 5 at the home of Dr. and Mrs. Leason H. Johnson of Troy.

New York City Society

At the meeting on March 19, the following program was given: "Diagnosis of Nose and Throat Conditions from the Standpoint of the General Practitioner," Dr. Thos. R. Thorburn, New York City. "Clinical Demonstration—Recurrent Pneumonia," Dr. H. V. A. Hillman, New York City.

Oneida County Society

A meeting was held on March 8 in the offices of Dr. H. M. Miller at Utica. Dr. J. R. Miller presided and Dr. Carl D. Clapp was the principal speaker.

OHIO

Central District

Dr. R. P. Baker, Delaware Springs Osteopathic Sanitarium, was the chief speaker at the Columbus meeting on March 24.

Dayton District

The program of the April meeting on the 11th, as published in advance, included addresses by Dr. H. V. Halladay of the Des Moines Still College of Osteopathy and Dr. Charles M. La Rue and Dr. R. P. Baker.

Lorain County

The February meeting was held in Lorain with osteopathic physicians in attendance from Cleveland and Sandusky.

OKLAHOMA

Dr. C. F. Stauber, secretary, calls attention to a little bulletin called "Oklahoma Osteopathy Sunshine," published by Dr. F. A. Englehart, Oklahoma City. In the first number Dr. Englehart says: "I believe a little bulletin printed occasionally could do considerable toward knitting a closer cooperative spirit in our Osteopathic Association in Oklahoma. So, here it is, and, if it makes subsequent appearances that will be its mission."

PENNSYLVANIA

Philadelphia College

It is reported that at a meeting of the faculty of the Philadelphia College of Osteopathy on March 6, over which Dr. Edgar O. Holden presided, the following papers were presented:

Dr. Arthur M. Flack, professor of pathology, "Osteopathic Interpretations of Structural Perversions." Dr. H. Walter Evans, head of the department of bacteriology and hygiene, "The Scope of the Internist in Osteopathy."

It is also reported that at a meeting of the Philadelphia College on March 17, Dr. J. Ivan Dufur, president of the Dufur Osteopathic Sanitarium at Ambler, discussed the osteopathic treatment of the insane.

TEXAS

El Paso

Dr. Lovie Evans, El Paso, writes that Dr. Evelyn R. Bush and party motored down from Albuquerque, N. M., late in February and spent several days. Dr. Bush was the guest of honor at a luncheon given to the osteopathic profession of the city by Dr. Evans, and gave a lecture and demonstration on osteopathic technic in the office of Dr. J. N. Reznikov. A meeting was held on March 9 to organize a local society.

Harris County Osteopathic Association

On March 14, Dr. Vincent O'Rourke was the principal speaker at the local meeting. Drs. H. S. Price and E. M. Bailey were appointed to make plans for the South Texas Osteopathic Convention, to be held in Houston, April 8-10. Officers were elected as follows: President, Dr. J. R. Alexander; vice president, Dr. S. A. Ennis; secretary-treasurer, Dr. L. M. Farquharson.

WASHINGTON

King County

Dr. Roberta Wimer-Ford reports that the February meeting of the King County (Seattle) Association was addressed by Dr. Arthur D. Becker on "Ascites—Differential Diagnosis and Clinical Significance" and Dr. Martin D. Young on "Character Analysis as an Aid to Diagnosis."

She reports the March meeting was to be held on the 10th.

Besides making plans for the Washington State Osteopathic Association meeting, which will be held in Seattle the last week in June, the program consisted of "Examination of the Heart," Dr. Arthur D. Becker; "Lesions Causing Heart Abnormalities and Some Interesting Case Histories and Proper Treatment," Dr. A. B. Ford; Discussion of High Points in Both These Talks, Dr. James T. Slaughter.

Spokane Osteopathic Association

A meeting was held on March 2 in the new offices of Drs. Leila B. and W. Reg. Fishleigh. The speaker of the evening, Dr. Frank Holmes, delivered a very interesting and instructive talk following which the members discussed ways and means of successfully launching a charitable clinic in the city. Dr. W. E. Abegglen, a recent

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visitor, was an enthusiastic commenter upon the progressive work of the local association.

W. REG. FISHLEIGH, Secretary.

Snohomish County

Dr. A. D. Becker, Seattle, addressed a meeting of Everett osteopathic physicians in the offices of Drs. Pugh and Pugh on March 9. It is reported that plans are under way for the organization of a Snohomish County Society.

Yakima Osteopathic Association

Thirty-two were present at the March meeting, which was entertained by Drs. C. A. Hughes and H. D. Bloxham in Dr. Bloxham's home.

WEST VIRGINIA

Parkersburg

The osteopathic physicians of Marietta and Parkersburg met on February 17 in the offices of Dr. M. A. Boyes at Parkersburg for their monthly gathering. Mrs. H. L. Benedict, Marietta, read a paper on "Pathology of the Thyroid Gland."

WISCONSIN

Madison District

Fifteen members of the society attended the quarterly meeting in Beloit March 15.

Milwaukee

Dr. W. B. Truax reports that on March 3 Dr. Menge, professor of biology in Marquette University, was one of the speakers and Mr. Pelican, director of the Milwaukee Art Institute, spoke on "The Application of Color to Therapeutics."

CANADA

Ontario—Toronto

The March meeting of the Toronto Association of Osteopathic Physicians met with Dr. W. L. Durnan on the 18th. The program was as follows: Dr. C. Erwin, Brantford, "The Unrobust Child"; Dr. C. E. Amsden, "Bates Eye Treatment"; Dr. R. N. McBain, "The Rib Lesion: Its Cause and Effect."

State Boards

(See also page 709)

IOWA

The next meeting for examination, of the Iowa State Board of Osteopathic Examiners, will be held at the State Capitol Building, Des Moines, May 31, June 1 and 2.

The fees for examination, which in all cases must accompany application, are for osteopathic physician $20.00, osteopathic surgeon $25 and for reciprocity $40.00. All fees must be in the form of a certified check or bank draft. Personal checks will be returned.

All application blanks must be in the hands of the secretary on or before May 15 to insure seat at the examination. This rule will be strictly enforced.

For further information and application blanks, address the secretary, Dr. D. E. Hannan, Suite 204 Gamble Block, Perry, Iowa.

KANSAS

Following are the names of the officers elected at the February meeting of the board: President, Dr. C. E. Willis, Wichita; secretary, Dr. F. M. Godfrey, Topeka; treasurer, Dr. P. W. Gibson, Winfield. Finance Committee: Dr. W. S. Chiles, Salina; Dr. Clyde Gray, Horton.

MICHIGAN

Dr. H. W. Conklin, Battle Creek, secretary of the state board, announces that the Michigan board will hold an examination in Battle Creek, June 14, 15 and 16.

TEXAS

It is reported that Dr. George G. Russell, Fort Worth, has been appointed a member of the medical examining board.

WASHINGTON

The new basic science law requires a preliminary examination in anatomy, physiology, chemistry, hygiene and pathology by five teachers in either the Washington University or the Washington State College appointed by the governor. I am told that at present these teachers in the W. U. are medics. Should any of your readers desire license in this state by reciprocity they had better get busy before this law goes into effect. I have application blanks.

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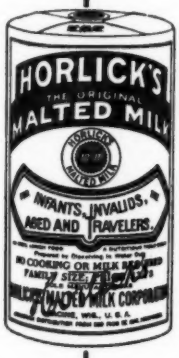

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(Continued from page 696)

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This bone cavity did not contain pus. It probably was the result of impaired nutrition in the bone with a consequent breaking down and absorption of bone tissue. There may have been an acute osteomyelitis in the area shortly after the injury. If such was the case, this would be classified as a quiescent chronic osteomyelitis.

STATE BOARDS

Connecticut. Examination in basic sciences at New Haven, Conn., June 4. This is prequisite to examination by license examining boards. Applications should be filed not later than May 28. Address State Board of Healing Arts, Box 1895, Yale Station, New Haven, Conn.

Pennsylvania. Next examination by State Board of Osteopathic Examiners, June 13, 14, 15, 16, at Philadelphia.

West Virginia. State Board of Osteopathy will meet at Clarksburg, July 11 and 12, to examine applicants and consider reciprocity applications. Applications should be in a week previous. Write Secretary, G. E. Morris, D.O., 542 Empire Bldg., Clarksburg, W. Va.

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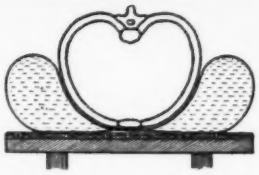

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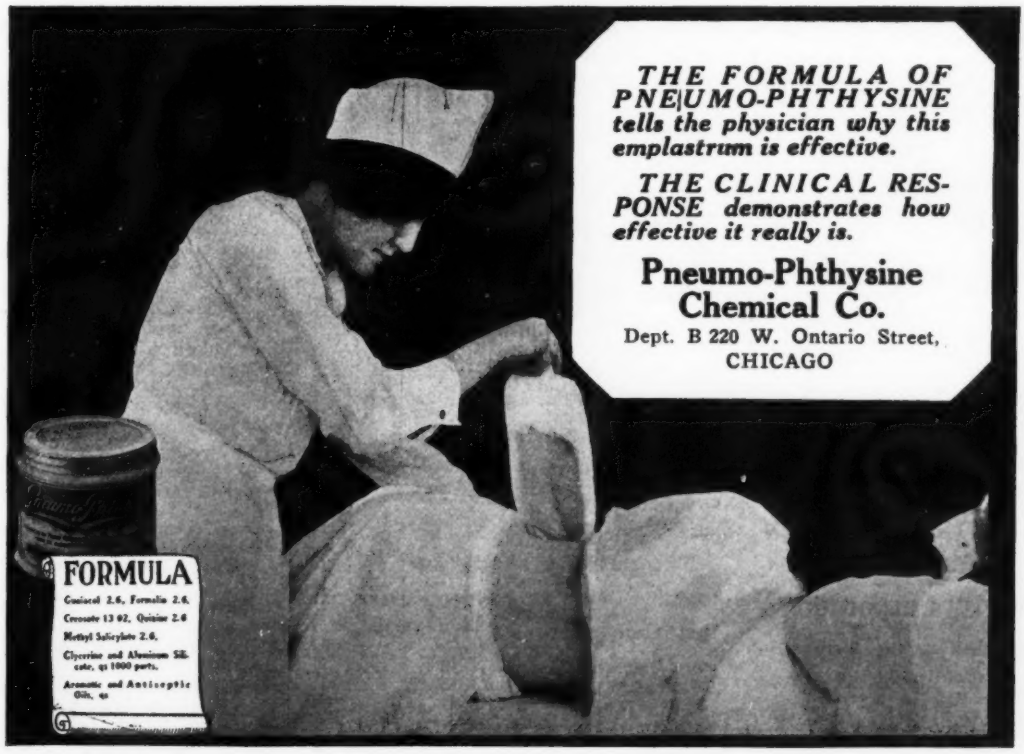

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(Continued from page 716)

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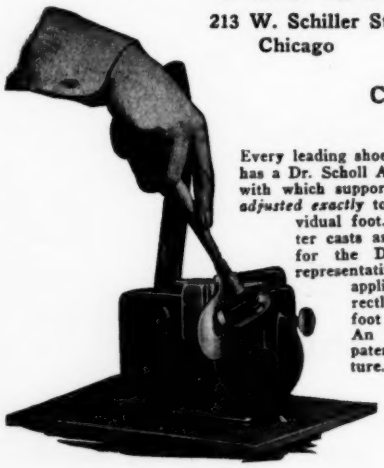

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